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Report on Metropolitan's Water Supplies

Dated February 11, 2002

MWD
Metropolitan Water District of Southern California

Report on Metropolitan's Water Supplies

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INTRODUCTION

OBJECTIVE OF THE REPORT

The objective of this document, *Report on Metropolitan's Water Supplies,* is to provide the member agencies, retail water utilities, cities and counties within the service area of The Metropolitan Water District of Southern California (Metropolitan), with information that may assist in their compliance with SB 221 (Kuehl) and SB 610 (Costa). Both SB 221 and SB 610 are recently enacted legislation requiring that new development meeting certain criteria provide "substantial evidence" of available water supplies in the event of drought. The report identifies actual and projected demands for water from Metropolitan, as well as the water supplies available to Metropolitan to meet those demands. This report will be updated as new information and circumstances warrant. It should be noted that the information presented in this report is consistent with that utilized in Metropolitan's Regional Urban Water Management Plan dated December 2000.

This report serves two primary purposes. These purposes are to:

- Demonstrate Metropolitan's ability to meet projected demands over the next 20 years and to provide additional resource reserves as a "margin-of-safety" that mitigates against uncertainties in demand projections and risks in implementing supply programs.

- Demonstrate that Metropolitan is implementing a comprehensive plan to secure reliable water supplies in accordance with policy principles and objectives established by Metropolitan's Board of Directors.

REGIONAL APPROACH TO WATER IN SOUTHERN CALIFORNIA

Southern California's challenge in managing its water resources is driven by one of the most fundamental realities of the West – it is an arid region subject to drought. And yet, fulfilling this responsibility of providing a safe and reliable water supply for beneficial uses by a growing population and economy is no easy task, especially given the many diverse interests for the region's water resources. In recent years, it has become clear that a regional approach that integrates the development of local and imported water supplies is needed to solve the problems of supply shortages and water quality. In addition, coordination amongst water providers is key to making cost-effective investments in local and imported water supplies and in infrastructure improvements.

Interaction with Local Entities. Water in Southern California is provided through a complex system of infrastructure operated by many different institutional entities. More than 300 public agencies and private companies provide water on a retail basis to approximately 17 million people living in a 5,200 square-mile area. Metropolitan is the primary wholesale provider of imported water for the region. Metropolitan serves 26 member agencies, comprising 14 cities, 11 municipal water districts, and 1 county authority. Metropolitan's member agencies, in turn, serve customers in more than 145 cities and 94 unincorporated communities.

Metropolitan was formed in 1928 under the Metropolitan Water District Act "for the purpose of developing, storing, and distributing water" to the residents of Southern California. Metropolitan's initial function was the construction and operation of the Colorado River Aqueduct to supplement local supplies. By the early 1970s Metropolitan was receiving delivery of imported water from the California Department of Water Resources using the newly constructed State Water Project facilities. The 1987-92 drought, and other regulatory and institutional changes that occurred before it, resulted in greater uncertainties in the imported supplies available to the region. For the first time, widespread water rationing had to be imposed in 1991.

Lesson Learned: Plan Ahead. In response to these circumstances, Metropolitan and its member agencies redefined Metropolitan's role and responsibilities and took important steps to secure and maintain water supply reliability.

- Metropolitan's Board of Directors established the policy objective for water supply reliability as part of its Integrated Resources Plan (IRP). The IRP was approved by the Board in January 1996. This policy objective is:

  Through the implementation of the Integrated Resources Plan, Metropolitan and its member agencies will have the full capability to meet full-service demands at the retail level at all times.

- The IRP calls for a coordinated regional approach to secure reliable supplies for Southern California over the long-term future. Coordinated efforts among Metropolitan, the member agencies, retailers, and other water providers are essential to realizing the benefit of a diversified program combining conservation with the development of all potential sources of supply – local surface runoff and groundwater, recycled water, desalinated seawater, and the imported supplies provided by Metropolitan.

- In order to meet the policy objective for water supply reliability, the IRP and Metropolitan's Strategic Plan Policy Principles established Metropolitan as a regional provider of water and redefined Metropolitan's responsibilities in this role. Metropolitan's responsibilities include:
  - Supporting the implementation of long-term conservation measures and development of additional local resources, such as recycling and reuse, groundwater clean-up, and ocean desalination.
  - Securing additional imported supplies through programs that increase the availability of water delivered through the Colorado River Aqueduct and the California Aqueduct.
  - Improving the region's water infrastructure needed to distribute, treat and store imported water.
  - Developing a comprehensive management plan for dealing with periodic surplus and shortage conditions.

Financial Strength: Key to Adaptability. The hallmark of Metropolitan's success in securing water supplies in anticipation of future demand is its strong financial history – with one of the highest public bond ratings in California. Most recently, Metropolitan has approved a new rate structure that provides added flexibility and adaptability for meeting an expanding range of uncertainties. These uncertainties include: (1) the difficulty in predicting changes in growth over the next several years, (2) the risks in implementing new local and regional supplies, (3) future water quality and environmental restrictions, and (4) climate change currently being studied as another factor that may effect water availability. Experts have cited Metropolitan's ability to invest in necessary supply and infrastructure projects as key to the region's adaptability to these uncertainties. For example, the $1 billion Inland Feeder pipeline will allow Southern California to import and store greater volumes of water from Northern California in the wintertime when it's available, thus minimizing supply deliveries in the summer, the potential adverse impacts to the environment and other users competing for supplies. In addition, Metropolitan's new rate structure permits agencies the flexibility to secure their supplies from Metropolitan's imported sources and through expanded development of conservation water recycling, desalination or water transfers.

CONTENTS OF THE REPORT

The sections of the report are as follows:

- **Background**. This section discusses key issues affecting water supply certainty, Metropolitan's policy objectives for water supply reliability, its resource strategy and the demonstration of progress in meeting objectives and implementing strategy.

- **Approach**. This section describes the major steps in forecasting water demands, assessing supply capabilities, and evaluating the sufficiency of the supplies to meet demands.

- **Findings**. This section presents the evaluation of the availability of Metropolitan's water supplies to meet projected supplemental demands and reserve supplies that provide a "margin of safety" to mitigate against uncertainties in demand projections and risks in implementing supply programs.

- **Appendix A**. This appendix documents Metropolitan's demand forecasts.

- **Appendix B**. This appendix presents an inventory of the resource programs that can be reasonably relied upon to deliver supplies through the Colorado River Aqueduct and documents the source of supply, expected supply capability, and supporting information for each program.

- **Appendix C**. This appendix presents an inventory of the resource programs that can be reasonably relied upon to deliver supplies through the California Aqueduct and documents the source of supply, expected supply capability, and supporting information for each program.

- **Appendix D**. This appendix presents an inventory of the resource programs that can be reasonably relied upon to deliver supplies from in-basin storage and documents the source of supply, expected supply capability, and supporting information for each program.

- **Appendix E**. Statement of disclosure covering this report is provided.

BACKGROUND

The last five years have been a time of enormous change in the way in which California water is viewed and managed well into the future. For example,

- The passage of SB 221 and SB 610 has placed on retail water providers the responsibility of demonstrating sufficient and reliable water supplies.
- There is increasing need for freshwater supplies among urban, agricultural and environmental interests.
- Water agencies are required to adapt to more water quality and environmental regulations in the production of drinking water, including protections for critical habitat and endangered species.
- Conservation, recycling and seawater desalination are playing an increasing role in meeting water supply needs.
- There is greater focus on local watershed management for supply and quality enhancements.
- There is greater recognition of the strategic value of underground and surface storage to meet water supply needs during shortages and emergencies.
- Recent water transfers, which move water from willing sellers to willing buyers, demonstrate the value of water transfers as dependable annual and dry-year supplies.

These changes present new risks and opportunities for securing sufficient and reliable water supplies. As a result, the emerging issue of concern is whether sufficient water supplies are available to meet existing and projected demands over the long-term.

METROPOLITAN'S POLICY OBJECTIVES FOR WATER SUPPLIES

In response to the question of sufficient water supplies, the Metropolitan Board of Directors established policy objectives regarding water supply reliability and Metropolitan's role and responsibilities in providing water service on a wholesale basis.

Water Supply Reliability. Metropolitan's Board of Directors established the policy objective for water supply reliability as part of its Integrated Resources Plan (IRP). The IRP was approved by the Board in January 1996. This policy objective is:

> *Through the implementation of the IRP, Metropolitan and its member agencies will have the full capability to meet full-service demands at the retail level at all times.*

This policy objective calls for close coordination between Metropolitan, the member agencies, and retail providers in integrating the development of imported and local resources to meet retail demands in an efficient and affordable way. Wholesale and retail water providers, including Metropolitan had been independently planning investments in projects and programs within the service area to address water reliability needs. Without a coordinated and balanced regional response by water providers to growing demands, the

region could run the risk of failing to demonstrate the availability of sufficient water supplies and risk of overspending on its water supply and infrastructure.

Metropolitan's Role and Responsibilities. Recognizing the need for coordination with member agencies and retail water providers, the IRP and the Strategic Plan Policy Principles (adopted in December 1999) established Metropolitan's role as a regional provider and redefined its responsibilities. The successful accomplishment of the policy objective on water supply reliability places significant responsibility on Metropolitan to provide leadership in several areas. These areas include: (1) implementing water management programs that support the development of cost-effective local resources, (2) securing additional imported supplies through programs that increase the availability of water delivered through the Colorado River Aqueduct and the California Aqueduct, (3) providing the infrastructure needed to integrate imported and local sources of supply, (4) establishing a comprehensive management plan for dealing with periodic surplus and shortage conditions, and (5) developing a rate structure that strengthens Metropolitan's financial capabilities to implement water supply programs and build infrastructure improvements.

METROPOLITAN'S WATER RESOURCE STRATEGY

The challenge for Metropolitan is to develop and implement a comprehensive water resource strategy that can adapt to continuous change, safeguard against uncertainties, and benefit from new opportunities. The key elements of Metropolitan's strategy are:

Portfolio of Diversified Supplies. Metropolitan continues to develop a portfolio of diversified supplies in accordance with the IRP and Metropolitan's Regional Urban Water Management Plan (RUWMP). The IRP established policy guidelines for investing in water conservation, water recycling, desalination, Colorado River deliveries, State Water Project deliveries, water transfers, and storage in groundwater basins and surface reservoirs. The RUWMP was adopted by Metropolitan's Board in December 2000 consistent with the California Urban Water Management Planning Act (Water Code Sections 10610 through 10656) and presents Metropolitan's plans for reasonable and practical efficient water uses, recycling and conservation activities, and drought contingencies.

The diverse water project investments in these plans reduce the risk of failure in any single part of the portfolio. Risks stem from cost, quality, or supply availability. It also reduces the potential impact of a severe drought or an emergency such as a major earthquake. The portfolio of diversified supplies avoids the pitfalls of "putting all your eggs in one basket."

Supply Reserves to Mitigate Uncertainties. Metropolitan plans to mitigate for supply uncertainties by continuing to secure supplies and build infrastructure improvements that are available in advance of the time of need and can provide back up capabilities. This adaptive management approach creates supply reserves that maintain Metropolitan's flexibility in responding to changes in demand and supply conditions.

New Rate Structure. Metropolitan's Board of Directors approved a new rate structure in October 2001. The rate structure provides the necessary financing capabilities to support the IRP and strategic planning vision that Metropolitan is a regional provider of services, maintains the reliable delivery of imported water supplies, encourages the development of additional local supplies like recycling and conservation, and accommodates a water transfer market. Through its regional services, Metropolitan ensures a baseline of reliability and quality for imported water deliveries in its service area. By unbundling its full-service water rate, Metropolitan provides greater opportunity for member agencies to competitively manage their supplies and demand to meet future needs in a responsible, least-cost manner.

DEMONSTRATING THE AVAILABILITY OF SUFFICIENT SUPPLIES

In order to demonstrate the availability of sufficient water supplies for the region, Metropolitan must continue to fulfill its responsibilities as the regional provider under the IRP and Strategic Plan. Metropolitan's progress in these areas of responsibility is as follows:

Implementing water management programs that support the development of cost-effective local resources. Metropolitan has established and implemented programs to provide financial incentives to member agencies in the development of local resources. These programs include the Local Projects Program (water recycling and groundwater recovery), Conservation Program, and Request-for-Proposal process for ocean desalination projects. These programs are meeting the resource objectives in the IRP.

The status and progress of Metropolitan's efforts in implementing programs to support the development of conservation and local resources management programs are documented in Metropolitan's RUWMP and Metropolitan's Annual Progress Report to the California State Legislature on Achievements in Conservation, Recycling and Groundwater Recharge, dated February 1, 2002.

Securing additional imported supplies through programs that increase the availability of water delivered through the Colorado River Aqueduct and the California Aqueduct. Metropolitan has implemented several programs to continue the reliable deliveries of water supplies through the Colorado River Aqueduct, the California Aqueduct and the development of in-basin groundwater storage. These efforts include participating in federal and state initiatives such as the California Water Use Plan for the Colorado River, CALFED for the Bay-Delta, and the Sacramento Valley Water Management Agreement. Beyond these initiatives, Metropolitan has acquired additional supplies through cooperative agreements and business partnerships with entities in the Central Valley and within the Colorado River system to implement water transfers, storage, conservation and land management programs. Finally, in accordance with Metropolitan's IRP and Strategic Plans, Metropolitan and the member agencies have moved ahead in maximizing the use of available water supplies through in-basin groundwater conjunctive use programs.

The status and progress of Metropolitan's efforts in implementing programs to secure additional supplemental imported water supplies are documented in the Metropolitan's RUWMP and this document, *Report on Metropolitan's Water Supplies*.

Providing the infrastructure needed to integrate imported and local sources of supply. Metropolitan's Capital Investment Plan (CIP) includes projects that have been identified from its studies of projected water needs that are embodied in Board-approved documents such as the IRP, Distribution System Overview Study, and the Chief Executive Officer's Business Plan. The identification, assessment and prioritization of 155 reliability and rehabilitation projects have been completed in the CIP.

The status and progress of Metropolitan's infrastructure improvements are documented in Metropolitan's Capital Investment Plan. This plan is presented to Metropolitan's Board of Directors as part of the annual budget review.

Establishing a comprehensive management plan for dealing with periodic surplus and shortage conditions. In April 1999, Metropolitan's Board of Directors adopted the Water Surplus and Drought Management Plan (WSDM Plan). This plan will guide the management of Metropolitan's water supplies during surplus and shortage conditions to achieve the reliability goals of the IRP.

The establishment of a comprehensive management plan for dealing with periodic surplus and shortage conditions is documented in the RUWMP and Metropolitan Report No. 1150, *Water Surplus and Drought Management Plan*.

The new rate structure strengthens Metropolitan's financial capabilities to implement water supply programs and build infrastructure improvements.

The approval of the new rate structure is documented in the October 2001 Board Letter.

APPROACH

The approach to evaluating the availability of Metropolitan's supplies involves three basic steps: (1) forecast supplemental water demands, (2) assess Metropolitan's supply capabilities, and (3) compare the supplemental demand forecasts and supply capabilities.

DEMAND FORECASTS

Water demands on Metropolitan are projected according to four key parameters: retail demands, local replenishment demands, local supplies, and Metropolitan system storage requirements. The methodology and estimates of water demand projections are documented in Appendix A.

- **Retail Demands**. To forecast retail water demands, Metropolitan utilizes an econometric model, the MWD-MAIN Water Use Forecasting System that relates water use to independent variables such as population, housing, employment, income, price, weather, and conservation. This model has demonstrated performance as many water resource agencies across the country use similar versions of this model including the U.S. Army Corps of Engineers, the U.S. Geological Survey, the state of New York, the cities of Phoenix, Las Vegas, and Portland and some of Metropolitan's member agencies.

  The demographic and economic variables in the forecast are based on the Southern California Association of Governments (SCAG) Regional Transportation Plan (98RTP) and the San Diego Association of Government (SANDAG) 2020 Forecast. SCAG and SANDAG demographic projections are supported by environmental impact reports and based on city, county and regional general plans. If a development within Metropolitan's service area is included in the local general plans utilized in the SCAG and SANDAG projections then there should be a linkage between the water demands for that development and the supplies made available by Metropolitan and the member agencies.

- **Local Replenishment Demands**. Local replenishment demands refer to the member agencies' annual need for water to recharge groundwater basins and surface reservoirs. Some of this need is met by the member agencies' purchases of deliveries under Metropolitan's Long-Term Seasonal Storage Program. These demands include the water delivered by Metropolitan to member agencies and stored by member agencies for use in future years and not the current year.

- **Local Supplies**. Local supplies include local groundwater and surface water production, Los Angeles Aqueduct deliveries, water recycling, groundwater recovery, and ocean desalination. Member agencies and retail water providers produce these local supplies. Over the next 20 years, Metropolitan's member agencies have projected the production from local resources development will increase by 17% and meet up to 55% of the total retail demands in 2020. Changes in the timing and supply yield of local resources projects would result in a corresponding change in supplemental water demands on Metropolitan.

- **Metropolitan System Replenishment Requirements**. As part of its resource strategy, imported water deliveries that are available during average and wet years would be stored in Metropolitan's surface reservoirs and groundwater storage accounts located within its service area and within the California Aqueduct and Colorado River Aqueduct systems. In addition to meeting consumptive and replenishment demands, Metropolitan would also require supplies in average and wet years to refill its surface reservoirs and groundwater conjunctive use accounts.

Water demands on Metropolitan are calculated as the retail demands plus local replenishment demands less local supplies. In average and wet years, Metropolitan's system replenishment requirements would be included. The Regional Urban Water Management Plan (RUWMP) prepared in December 2000 includes forecasts of demands on Metropolitan calculated in this manner. These demand projections are shown in the following table. A comparison of the supplemental demands projected according to Metropolitan's RUWMP and according to the member agencies' urban water management plans is also shown. The RUWMP projections are 7 to 11 percent higher than the projections of the member agencies. This difference indicates that Metropolitan's supplies developed in accordance with the RUWMP would provide a measure of "margin of safety" or flexibility to accommodate some delays in local resources development or adjustments in development plans.

Demands on Metropolitan
(in million acre-feet)

Demands on Metropolitan (Average Year)	2005	2010	2015	2020
MWD RUWMP[1]	1.90	1.95	2.08	2.30
Member Agencies Plans[2]	1.68	1.82	1.94	2.09
Difference	0.22 11%	0.13 7%	0.14 7%	0.21 9%

1 Based on Metropolitan's Regional Urban Water Management Plan adopted in December 2000.
2 Based on Metropolitan review of urban water management plans submitted by member agencies in December 2000.

SUPPLY CAPABILITIES

Metropolitan's supply capabilities are the expected quantities of water that can be provided by specific supply programs included in Metropolitan's resource plan. Supply capabilities presented in this report vary according to year types (wet, average, and dry hydrologic conditions). In order to determine Metropolitan's supply capabilities, available sources of supply have been inventoried and the associated supply yields have been estimated. The supply inventory and yields are documented in Appendices A, B, and C.

- **Supply Inventory**. Metropolitan's available supplies are diverse and include historical SWP deliveries, Colorado River deliveries (according to Federal apportionments and guidelines), water transfers and exchanges, storage and groundwater banking programs, and State and Federal initiatives (such as the California Water Use Plan for the Colorado River and Delta Improvements). These programs have been inventoried according to the manner in which they are delivered to Metropolitan's system. These categories of delivery are: (1) Colorado River Aqueduct Deliveries, (2) California Aqueduct Deliveries, and (3) In-Basin Storage Deliveries.

  In addition, the supplies are further categorized according to their implementation status. Supplies that are currently available are considered to have a high degree of certainty and reliability as they have successfully completed the critical implementation requirements. The currently available supplies refer to those resource programs that have completed environmental review, have funds appropriated or budgeted for implementation or construction, have requested or received permits and regulatory approvals and are operationally on-line by a date certain. Supplies that are under development are well defined in terms of specific projects, but are subject to some uncertainties in timing and supply yield, as they have not yet completed the critical implementation requirements. The supplies under development refer to those resource programs that are undergoing technical feasibility studies, environmental review, and negotiations for final agreements to implement and operate. The inventory of Metropolitan's supplemental supplies is shown in the following table.

- **Supply Capabilities**. The maximum supply capability of each of the resource programs has been estimated for various hydrologic events that occur in years 2005, 2010, 2015, and 2020. The hydrologic events include a multiple year dry period (repeat of 1990-92 drought), a single dry year (repeat of 1977 below-normal conditions), average year (statistical average), and wet year (repeat of 1985 above-normal condition). The expected supply capability has been estimated according to two key considerations.

  (1) Simulations of deliveries from the Colorado River Aqueduct, California Aqueduct and in-basin storage. The historical sequence of 77 hydrologic years from 1922 to 1998 are repeated into the future in order to determine the Metropolitan's water delivery capabilities under the weather and system operating conditions for the year types.
  (2) Deliveries based on historical record, written contracts or other proof, financing, and federal, state, and local permits/approvals to the extent each is applicable.

- **Supply Sufficiency**. The demand forecasts and supply capabilities have been compared over the next 20 years and under varying hydrologic conditions. These comparisons determine the supplies that can be reasonably relied upon to meet projected supplemental demands and to provide resources reserves that can provide a "margin of safety" to mitigate against uncertainties in demand projections and risks in implementing supply programs.

Metropolitan's Water Supplies

Colorado River Aqueduct Deliveries

Currently Available:
- Base Apportionment (Priority 4)
- IID/MWD Conservation Program
- Interim Surplus Guidelines (ISG)/Priority 5 Apportionment
- Off Aqueduct Storage
  - Hayfield Storage Program
  - Central Arizona Banking Demonstration

Under Development:
- Coachella & All-American Canal Lining Projects
- SDCWA/IID Transfer
- PVID Land Management Program
- Off-Aqueduct Storage/Transfer Programs
  - Cadiz Groundwater Storage and Dry-Year Supply Program
  - Lower Coachella Valley Groundwater Storage Program
  - Upper Chuckwalla Storage Program
  - Central Arizona Banking Program

California Aqueduct Deliveries

Currently Available:
- SWP Deliveries (Based on historical record)
- San Luis Reservoir Carryover
- Advance Delivery with Coachella Valley WD and Desert WA
- Semitropic Water Banking and Exchange Program
- Arvin-Edison Program Water Management Program
- San Bernardino Valley MWD Program
- Spot Market Transfers (Purchased on as-needed basis)

Under Development:
- Delta Improvements
- Kern Delta Water District Program
- Additional Transfers/Storage (San Bernardino Conjunctive Use Program, Westside Valley transfers, and Eastside Valley Transfers)

In-Basin Storage Deliveries

Currently Available:
- Diamond Valley Lake (DVL)
- Flexible Storage in Castaic Lake and Lake Perris
- Groundwater Conjunctive Use Programs
  - Long-Term Seasonal Storage Program
  - North Las Posas Storage Program

Under Development:
- Groundwater Conjunctive Use Programs
  - Raymond Basin Storage Program
  - Proposition 13 Storage Programs
  - Additional Programs

FINDINGS

In summary, this analysis finds that current practices allow Metropolitan to bring water supplies on-line at least ten years in advance of demand with a very high degree of reliability. If all imported water supply programs and local projects proceed as planned, with no change in demand projections, reliability could be assured beyond 20 years.

The availability of Metropolitan's water supplies is determined by comparing total projected water demand and the expected water supply over the next 20 years. These comparisons are shown in the following graphs and tables. They demonstrate that there are sufficient supplies that can be reasonably relied upon to meet projected supplemental demands and that there are additional reserve supplies that could provide a "margin of safety" to mitigate against uncertainties in demand projections and risks in fully implementing all supply programs under development.

In more detail, the findings of the *Report on Metropolitan's Water Supplies* are:

Metropolitan's current practice of implementing supply programs in advance of need has assured reliable supplemental water deliveries:

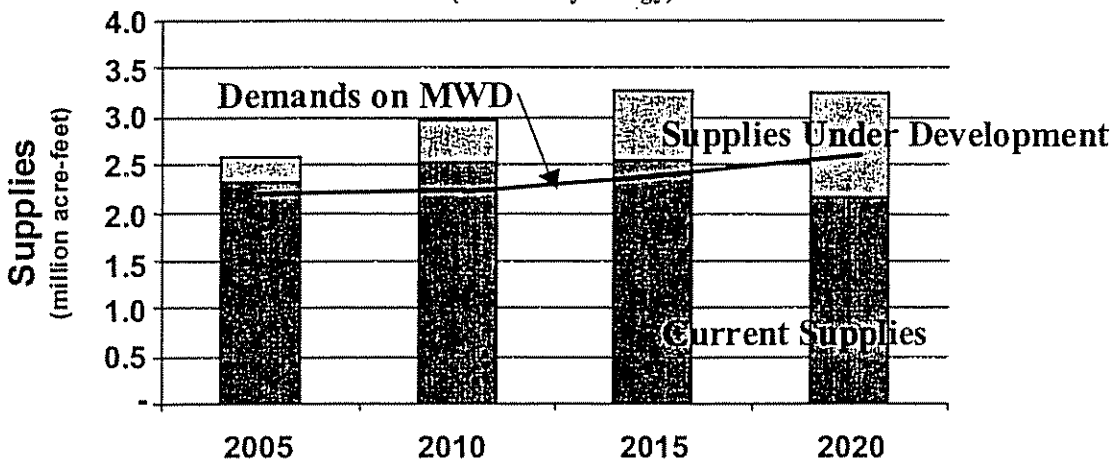
- **Measure of Certainty**. Consistent with current practice, Metropolitan has and will continue to develop supplies that are available at least 10 years in advance of need in order to ensure water supply reliability. This advance implementation recognizes that several years may be required for a program to become fully operational and reach ultimate production capability. In addition, the advance supply provides a reserve capability that safeguards against potential demand and supply uncertainties during the interim years, while being an investment that is fully utilized at the time of need. This practice provides reliability without wasted cost.

Metropolitan has a comprehensive plan to secure reliable water supplies:

- **Implementing a Comprehensive Supply Plan**. Metropolitan is implementing a comprehensive plan to secure water supplies without disrupting the current practice of bringing supply programs on-line in advance of need. As a result, there are supplies that are currently available at least 10 years in advance of need and those that are planned and under development.
- **Securing Reliability beyond 20 Years**. If Metropolitan's supply programs were implemented under this comprehensive resource plan and if current trends for retail demands and local supplies continue, Metropolitan would have the capability to reliably meet projected water demands through 2030.
- **Providing Flexibility in Demand Projections**. Based on a conservative approach, the supplemental demand projections presented in Metropolitan's RUWMP and this report are 7 to 11 percent higher than the projections presented in the member agencies' urban water management plans. This difference indicates that Metropolitan's water supplies developed in accordance with the RUWMP would provide a "margin of safety" or

Multiple Dry-year Supply Capability & Projected Demands

(1990-92 Hydrology)



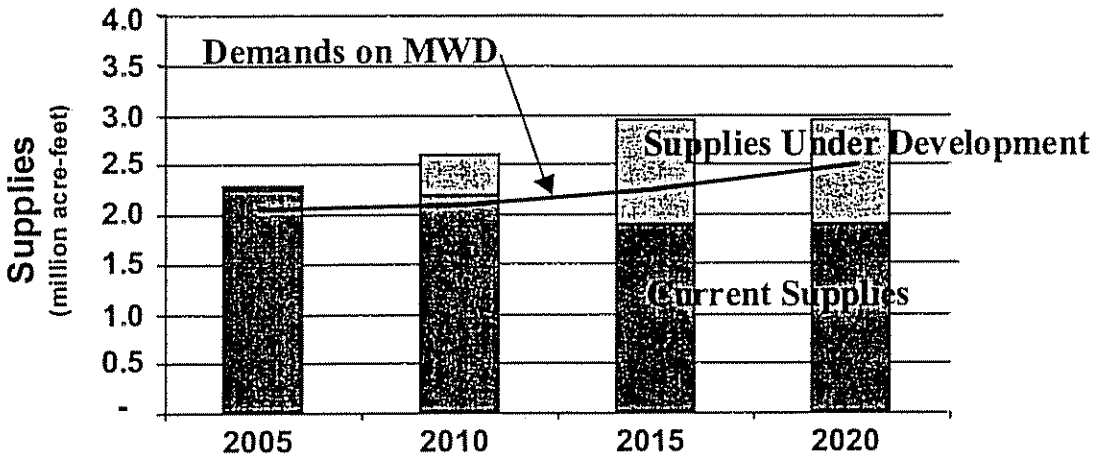
Supply Capability[1] & Potential Reserve or Replenishment

	2005	2010	2015	2020
		(acre-feet per year)		
Current Supplies				
Colorado River[2]	992,800	1,131,800	1,183,000	820,000
California Aqueduct[3]	960,300	1,016,100	986,100	960,300
In-Basin Storage[4]	336,700	390,000	390,000	390,000
Supplies Under Development				
Colorado River[2]	217,500	118,200	67,000	430,000
California Aqueduct[3]	50,000	245,000	440,000	440,000
In-Basin Storage[4]	-	99,100	200,000	200,000
Maximum Supply Capability[1]	**2,557,300**	**3,000,200**	**3,266,100**	**3,240,300**
Total Demands on Metropolitan[5] (Firm & Replenishment)	**2,199,300**	**2,251,700**	**2,360,700**	**2,572,500**
Potential Reserve & System Replenishment Supply	**358,000**	**748,500**	**905,400**	**667,800**

1 -- Represents expected supply capability for resource programs.
2 -- Total Colorado River Aqueduct Deliveries are limited to CRA capacity (1,250,000 acre-feet per year) and include federal apportionments and guidelines, water conservation, water transfers and storage programs (See appendix B).
3 -- Total California Aqueduct Deliveries include historical SWP deliveries, water transfers/exchanges, storage programs and delta improvements (See Appendix C).
4 -- Total In-Basin Storage Deliveries include reservoir storage and groundwater conjunctive-use programs within Metropolitan's service area (See Appendix D).
5 -- Based on SCAG 98 RTP, SANDAG 1998 forecasts and member agency projections of local supplies (See Appendix A).

Single Dry-year Supply Capability & Projected Demands

(1977 Hydrology)



Supply Capability[1] & Potential Reserve or Replenishment

	2005	2010	2015	2020
		(acre-feet per year)		
Current Supplies				
Colorado River[2]	1,250,000	1,181,800	870,000	870,000
California Aqueduct[3]	625,300	625,300	650,300	650,300
In-Basin Storage[4]	370,000	390,000	390,000	390,000
Supplies Under Development				
Colorado River[2]	-	68,200	380,000	380,000
California Aqueduct[3]	50,000	245,000	440,000	440,000
In-Basin Storage[4]	-	99,100	200,000	200,000
Maximum Supply Capability[1]	**2,295,300**	**2,609,400**	**2,930,300**	**2,930,300**
Total Demands on Metropolitan[5] (Firm & Replenishment)	**2,093,100**	**2,145,000**	**2,270,900**	**2,494,900**
Potential Reserve & System Replenishment Supply	**202,200**	**464,400**	**659,400**	**435,400**

1 -- Represents expected supply capability for resource programs.
2 -- Total Colorado River Aqueduct Deliveries are limited to CRA capacity (1,250,000 acre-feet per year) and include federal apportionments and guidelines, water conservation, water transfers and storage programs (See appendix B).
3 -- Total California Aqueduct Deliveries include historical SWP deliveries, water transfers/exchanges, storage programs and delta improvements (See Appendix C).
4 -- Total In-Basin Storage Deliveries include reservoir storage and groundwater conjunctive-use programs within Metropolitan's service area (See Appendix D).
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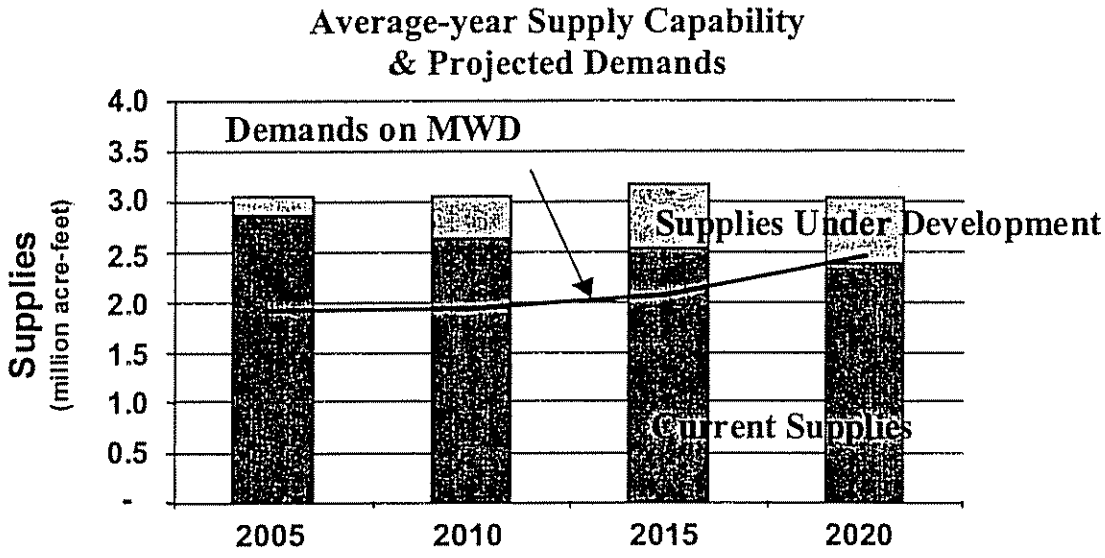

Supply Capability[1] & Potential Reserve or Replenishment

	2005	2010	2015	2020
		(in acre-feet per year)		
Current Supplies				
Colorado River[2]	1,089,300	850,900	819,500	673,000
California Aqueduct[3]	1,780,800	1,783,200	1,723,900	1,714,900
In-Basin Storage[4]	-	-	-	-
Supplies Under Development				
Colorado River[2]	160,700	368,700	388,700	388,700
California Aqueduct[3]	20,000	65,000	220,000	220,000
In-Basin Storage[4]	-	-	-	-
Maximum Supply Capability[1]	**3,050,800**	**3,067,800**	**3,152,100**	**2,996,600**
Total Demands on Metropolitan[5] (Firm & Replenishment)	**1,901,400**	**1,953,800**	**2,076,500**	**2,390,000**
Potential Reserve & System Replenishment Supply	**1,149,400**	**1,114,000**	**1,075,600**	**606,600**

1 -- Represents expected supply capability for resource programs.
2 -- Total Colorado River Aqueduct Deliveries are limited to CRA capacity (1,250,000 acre-feet per year) and include federal apportionments and guidelines, water conservation, water transfers and storage programs (See appendix B).
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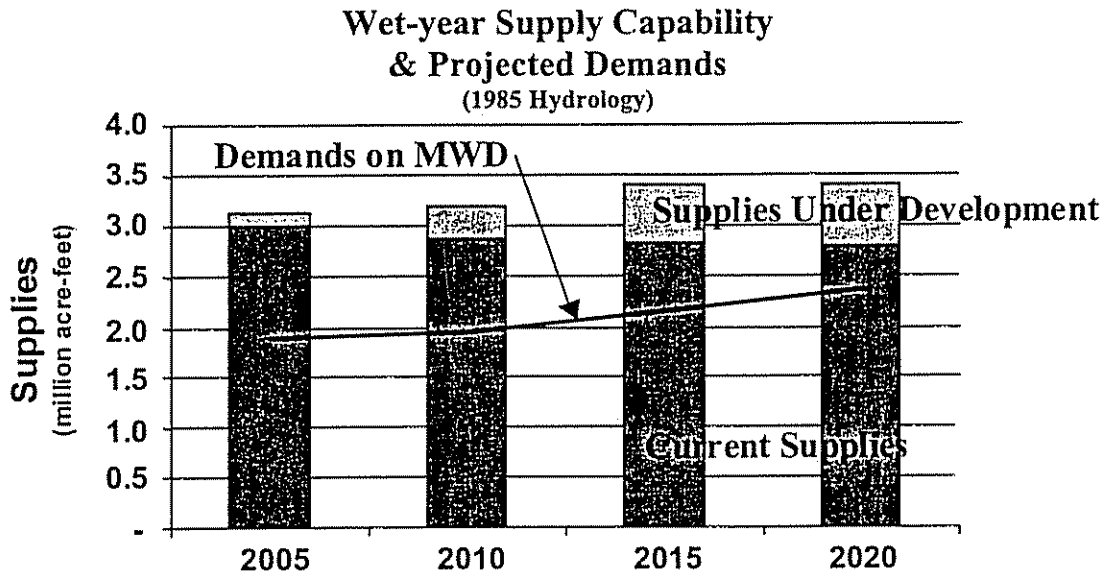
4 -- Total In-Basin Storage Deliveries include reservoir storage and groundwater conjunctive-use programs within Metropolitan's service area (See Appendix D).
5 -- Based on SCAG 98 RTP, SANDAG 1998 forecasts and member agency projections of local supplies (See Appendix A).



Supply Capability[1] & Potential Reserve or Replenishment

	2005	2010	2015	2020
		(acre-feet per year)		
Current Supplies				
Colorado River[2]	1,126,500	975,300	955,300	908,800
California Aqueduct	1,882,200	1,882,200	1,882,200	1,882,200
In-Basin Storage	-	-	-	-
Supplies Under Development				
Colorado River[2]	123,500	274,700	294,700	341,200
California Aqueduct	20,000	65,000	220,000	220,000
In-Basin Storage	-	-	-	-
Maximum Supply Capability[4]	**3,152,200**	**3,197,200**	**3,352,200**	**3,352,200**
Total Demands on Metropolitan[3] (Firm & Replenishment)	**1,917,700**	**1,973,300**	**2,102,600**	**2,329,600**
Potential Reserve & System Replenishment Supply	**1,234,500**	**1,223,900**	**1,249,600**	**1,022,600**

1 -- Represents expected supply capability for resource programs.
2 -- Total Colorado River Aqueduct Deliveries are limited to CRA capacity (1,250,000 acre-feet per year) and include federal apportionments and guidelines, water conservation, water transfers and storage programs (See appendix B).
3 -- Total California Aqueduct Deliveries include historical SWP deliveries, water transfers/exchanges, storage programs and delta improvements (See Appendix C).
4 -- Total In-Basin Storage Deliveries include reservoir storage and groundwater conjunctive-use programs within Metropolitan's service area (See Appendix D).
5 -- Based on SCAG 98 RTP, SANDAG 1998 forecasts and member agency projections of local supplies (See Appendix A).

Demand Projections

RETAIL DEMAND FORECAST OVERVIEW

Water demand in the Metropolitan service area has experienced several discernable trends in the past five years. Southern California emerged from a regional economic recession in the mid-1990s. Despite the robust economy, the sustained development of long-term conservation programs and increases in pricing have succeeded in suppressing growth in demands. Metropolitan projects that aggregate water demand will continue along this trend; per capita water demand will not return to its pre-drought highs, with conservation programs and water pricing offsetting water demand growth. To forecast urban retail water demands, Metropolitan uses the MWD-MAIN Water Use Forecasting System. MWD-MAIN is a model combining statistical and end-use methods that has been adapted to conditions in Southern California. The statistical portion of the model incorporates projections of demographic and economic variables from regional planning agencies (the Southern California Association of Governments, or SCAG, and the San Diego Association of Governments, or SANDAG) into statistically estimated water demand models to produce forecasts of water demand. SCAG and SANDAG demographic forecasts are developed primarily used for transportation development purposes. The SCAG and SANDAG forecasts provide a linkage to local development plans and general plans through the inclusion of those plans, and through stakeholder input and feedback processes. Final plans adopted by SCAG and SANDAG are supported by EIR/EIS documentation. The end-use portion of the model derives estimates of conservation by adding additional information on how that water is used- the end uses. The MWD-MAIN system features a separate unique model for each sector. In the residential sector, the forecasts of water demand per dwelling unit are ultimately combined with the forecasts of dwelling units from the regional planning agencies to yield an estimate of total sector water demand. Similarly, in the nonresidential sector, water use per employee is combined with forecasts of employment to yield an estimate of total non-residential water demand.

In addition to accounting for future demographic trends, Metropolitan's water demand forecasts incorporate current and future water demand management (conservation) efforts: In 1991, Metropolitan signed a Memorandum of Understanding Regarding Urban Water Conservation in California (MOU). The MOU commits Metropolitan to implement a number of long-term water conservation measures referred to as Best Management Practices (BMPs).

The MWD-MAIN model embeds a detailed accounting of water conservation, distinguishing between:

- *Passive Conservation* - Water saved as a result of changes in water efficiency requirements for plumbing fixtures in plumbing codes. This form of conservation would occur without any water agency action.

- *Active Conservation* - Water saved directly as a result of conservation programs by water agencies (including implementation of Best Management Practices). This form of conservation is unlikely to occur without agency action.

- *Price-effect Conservation* - Water saved by retail customers attributable to the effect of changes in the real (inflation-adjusted) price of water. There may be some overlap between this form of conservation and the previous two. For example, increased water prices might induce a consumer to take part in one of the active conservation programs run by the providing agency.

Metropolitan's demand projections account for the effects of the conservation BMPs, including projected changes in the price of water. The forecast is based on expected BMP participation, recognizing that some of the region's retail agencies are not BMP signatories and that some BMPs are not cost effective in Metropolitan's service area.

TRENDS IN SOUTHERN CALIFORNIA

Population: The population of Metropolitan's service area was approximately 15.8 million in 1995 and has grown to approximately 16.9 million in 2000. This represents an annual addition over this five-year period of about 211,000 people per year. The population in the entire service area is projected to be approximately 21.3 million by the year 2020, constituting an average annual increase of about 223,000 people per year.

Industrial and Commercial: Southern California accounts for a significant portion of the state's economy, accounting for approximately 54% of the state's total personal income. In 1999, total personal: income in Southern California was estimated to be $535 billion. Employment growth is not projected to occur at the same rate across the six counties. Over the 20-year period, 2000-2020, the greatest employment increases are expected to occur in Los Angeles County, with more than one million additional jobs expected. Relative to existing employment, Riverside and San Bernardino counties are expected to have the fastest rates of growth (104 and 91 percent), followed by Ventura and Orange counties (64 and 41 percent), and San Diego and Los Angeles counties (29 and 25 percent). The number of people employed is expected to increase from 7.8 million in 2000 to about 10.5 million in 2020. This increase of about 35 percent is greater than the projected population (26 percent) and housing growth (30 percent), suggesting that a somewhat greater proportion of the population will be employed over time.

Residential Consumers: Regional planning agencies - SCAG and SANDAG - have forecast growth in residential housing in all geographic areas of the Metropolitan service area. The total occupied housing stock is expected to increase more than 30 percent from 2000 to 2020 (from 5.4 to 7.1 million housing units). Much of this growth is forecasted to occur in inland areas. No increase in the area served (annexation) is expected at this time. Within the service area, the household occupancy size (household population divided by total occupied dwelling units) is forecasted to remain at around three persons per household.

Water Demands: Historical retail water demands in Metropolitan's service area have increased from 3.1 million acre-feet in 1980 to 3.9 million acre-feet in 1990. Due to

the recession, wet weather, unprecedented conservation efforts, and lingering drought impacts, water use was lower for several years in the mid-nineties. Of the 3.5 million acre-feet used in 1998, 3.2 million acre-feet (91 percent) were used for municipal and industrial purposes (M&I), and 0.3 million acre-feet (9 percent) were used for agricultural purposes. The relative share of M&I water use to total water use has been increasing over time as agricultural water use has declined due to urbanization and market factors, including the price of water. Agricultural water use accounted for 14 percent in 1980, 11 percent in 1990, 9 percent in 1995, and 8.3 percent in 1997. Total water use is projected to grow from a projected 3.8 million acre-feet in 2000 to 4.8 million acre-feet in 2020. All water demand projections reflect demands under normal weather conditions. The water demand forecasts account for water savings resulting from plumbing codes, price effects, and actual and projected implementation of Best Management Practices. Per capita water demand is forecast to remain relatively constant over the 20-year forecast horizon.

- *By County* - Total retail water demand is not expected to grow uniformly across counties. Following the pattern of the demographic projections, the greatest increase in urban water demands is expected to occur in Los Angeles, Riverside, and San Diego counties. The largest absolute increase in water demand is expected to occur in Los Angeles County, an increase of 380,000 acre-feet between 2000 and 2020. On a percentage basis, demands in Riverside County are expected to increase at the fastest rate (51 percent between 2000 and 2020), and Los Angeles and Orange Counties are expected to increase with the lowest rate.

- *By Sector* - Water use can also be broken down by sector. Between 2000 and 2020, single-family residential water use is expected to increase by 27 percent, while multifamily water use is expected to increase by 43 percent. Nonresidential water use between 2000 and 2020 is expected to increase by 27 percent. Water use projections for the nonresidential sector generally follow the employment projections shown in Table A.1-3. There is an additional sector, which is needed to account for system losses and any other retail demand.

RESIDENTIAL WATER USE

Although single-family homes account for about 55 percent of the total occupied housing stock, they account for about 70 percent of total residential water demands. This variation occurs because single-family households tend to use more water than households in a multi-family structure (such as apartment buildings) on a per housing-unit basis. Single-family households tend to have more persons living in the household; they are likely to have more water-using appliances and fixtures; and they tend to have more landscaping per home.

NONRESIDENTIAL WATER USE

Nonresidential water use represents about 25 percent of the total M&I demand in Metropolitan's service area. The nonresidential sector represents water that is used by

businesses, services, government, institutions (such as hospitals and schools), and industrial (or manufacturing) establishments. Within the commercial/institutional category, the top water users include schools, hospitals, hotels, amusement parks, colleges, laundries, and restaurants. In Southern California, the major industrial users include electronics, aircraft, petroleum refining, beverages, food processing, and other industries that use water as a major component of the manufacturing process.

AGRICULTURAL WATER USE

Agricultural water use currently constitutes about 8 percent of total regional water demand in Metropolitan's service area. Metropolitan has historically provided water supplies to meet 30 to 50 percent of total agricultural water demand. Remaining agricultural water demands are met by local water supplies.

DEMAND SUMMARY TABLES

The following tables show total retail demands (municipal and industrial, and agricultural), total replenishment demands, total locally produced water supplies, and the supplemental demands for water that are met by Metropolitan.

The figures below are derived using a historical sequence of hydrologic outcomes from 1922 through 1998, for each of the forecasted years shown. The "Average" is the statistical mean, calculated over 77 hydrologic outcomes from 1922 through 1998. "Wet" is the outcome from the hydrologic year 1985. "Single Dry" is the outcome from the hydrologic year 1977. "Multiple Dry" is the average outcome over three sequential hydrologic years from 1990-1992.

Estimated Water Demands
Year 2005
(acre-feet per year)

Year	Multiple Dry-years (1990-1992)	Single Dry-year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
Retail Demand (MI & AG)	4,161,500	4,123,600	4,073,600	4,173,500
Replenishment	170,000	164,400	162,700	169,600
Local Supplies	2,132,200	2,194,900	2,334,900	2,425,400
Demands On Metropolitan	**2,199,300**	**2,093,100**	**1,901,400**	**1,917,700**

Estimated Water Demands
Year 2020
(acre-feet per year)

Year	Multiple Dry-years (1990-1992)	Single Dry-year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
Retail Demand (MI & AG)	4,944,400	4,905,400	4,852,100	4,970,300
Replenishment	183,500	178,900	177,200	184,900
Local Supplies	2,555,400	2,589,400	2,639,300	2,825,600
Demands On Metropolitan	**2,572,500**	**2,494,900**	**2,390,000**	**2,329,600**

Colorado River Aqueduct Deliveries

Colorado River Aqueduct Deliveries
Program Capabilities[1]
Year 2005
(acre-feet per year)

Programs	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
Current Programs				
Base Apportionment – Priority 4	550,000	550,000	550,000	550,000
IID/MWD Conservation Program	90,000	90,000	90,000	90,000
Interim Surplus Guidelines/ Priority 5 Apportionment	247,800	486,500	449,300	486,500
Off-Aqueduct Storage				
• Hayfield Storage Program	75,000	75,000	-	-
• Central Arizona Banking Demonstration	30,000	80,000	-	-
Subtotal of Current Programs	**992,800**	**1,281,500**	**1,089,300**	**1,126,500**
Programs Under Development				
Coachella & All-American Canals Lining Projects	21,500	21,500	21,500	21,500
SDCWA Transfer	85,000	85,000	85,000	85,000
PVID Land Management Program	111,000	111,000	111,000	111,000
Off-Aqueduct Storage/Transfers				
• Cadiz Storage/Transfer Program	-	-	-	-
• Lower Coachella Storage Program	-	-	-	-
• Chuckwalla Storage Program	-	-	-	-
• Central Arizona Banking	-	-	-	-
Subtotal of Proposed Programs	**217,500**	**217,500**	**217,500**	**217,500**
Maximum Supply Capability[2]	**1,210,300**	**1,499,000**	**1,306,800**	**1,344,000**
Maximum Expected CRA Deliveries[3]	**1,207,000**	**1,250,000**	**1,250,000**	**1,250,000**

1 -- Represents expected supply capability for resource programs.
2 -- Total maximum supply capability is shown to be greater than the CRA capacity. This indicates that full CRA deliveries can be maintained even with the loss or deferral of individual programs and that Metropolitan has the operational flexibility to optimize the use of programs.
3 -- Total Colorado River Aqueduct Deliveries limited to CRA capacity (1,250,000 acre-feet per year).

Colorado River Aqueduct Deliveries
Program Capabilities[1]
Year 2010
(acre-feet per year)

Programs	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
Current Programs				
Base Apportionment – Priority 4	550,000	550,000	550,000	550,000
IID/MWD Conservation Program	90,000	90,000	90,000	90,000
Interim Surplus Guidelines/ Priority 5 Apportionment	311,800	311,800	210,900	335,300
Off-Aqueduct Storage				
• Hayfield Storage Program	150,000	150,000	-	-
• Central Arizona Banking Demonstration	30,000	80,000	-	-
Subtotal of Current Programs	**1,131,800**	**1,181,800**	**850,900**	**850,900**
Programs Under Development				
Coachella & All-American Canals Lining Projects	77,700	77,700	77,700	77,700
SDCWA Transfer	180,000	180,000	180,000	180,000
PVID Land Management Program	111,000	111,000	111,000	111,000
Off-Aqueduct Storage/Transfers				
• Cadiz Storage/Transfer Program	150,000	150,000	-	-
• Lower Coachella Storage Program	-	-	-	-
• Chuckwalla Storage Program	-	-	-	-
• Central Arizona Banking	50,000	50,000	-	-
Subtotal of Proposed Programs	**568,700**	**568,700**	**368,700**	**368,700**
Maximum Supply Capability[2]	**1,700,500**	**1,750,500**	**1,219,600**	**1,344,000**
Maximum Expected CRA Deliveries[3]	**1,250,000**	**1,250,000**	**1,219,600**	**1,250,000**

1 – Represents expected supply capability for resource programs.
2 – Total maximum supply capability is shown to be greater than the CRA capacity. This indicates that full CRA deliveries can be maintained even with the loss or deferral of individual programs and that Metropolitan has the operational flexibility to optimize the use of programs.
3 – Total Colorado River Aqueduct Deliveries limited to CRA capacity (1,250,000 acre-feet per year).

Colorado River Aqueduct Deliveries
Program Capabilities[1]
Year 2015
(acre-feet per year)

Programs	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
Current Programs				
Base Apportionment – Priority 4	550,000	550,000	550,000	550,000
IID/MWD Conservation Program	90,000	90,000	90,000	90,000
Interim Surplus Guidelines/ Priority 5 Apportionment	363,000	-	179,500	315,300
Off-Aqueduct Storage				
• Hayfield Storage Program	150,000	150,000	-	-
• Central Arizona Banking Demonstration	30,000	80,000	-	-
Subtotal of Current Programs	**1,183,000**	**870,000**	**819,500**	**955,300**
Programs Under Development				
Coachella & All-American Canals Lining Projects	77,700	77,700	77,700	77,700
SDCWA Transfer	200,000	200,000	200,000	200,000
PVID Land Management Program	111,000	111,000	111,000	111,000
Off-Aqueduct Storage/Transfers				
• Cadiz Storage/Transfer Program	150,000	150,000	-	-
• Lower Coachella Storage Program	150,000	150,000	-	-
• Chuckwalla Storage Program	150,000	150,000	-	-
• Central Arizona Banking	50,000	50,000	-	-
Subtotal of Proposed Programs	**888,700**	**888,700**	**388,700**	**388,700**
Maximum Supply Capability[2]	**2,071,700**	**1,758,700**	**1,208,200**	**1,344,000**
Maximum Expected CRA Deliveries[3]	**1,250,000**	**1,250,000**	**1,208,200**	**1,250,000**

1 -- Represents expected supply capability for resource programs.
2 -- Total maximum supply capability is shown to be greater than the CRA capacity. This indicates that full CRA deliveries can be maintained even with the loss or deferral of individual programs and that Metropolitan has the operational flexibility to optimize the use of programs.
3 -- Total Colorado River Aqueduct Deliveries limited to CRA capacity (1,250,000 acre-feet per year).

Colorado River Aqueduct Deliveries
Program Capabilities[1]
Year 2020
(acre-feet per year)

Programs	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
Current Programs				
Base Apportionment – Priority 4	550,000	550,000	550,000	550,000
IID/MWD Conservation Program	90,000	90,000	90,000	90,000
Interim Surplus Guidelines/ Priority 5 Apportionment	-	-	33,000	268,800
Off-Aqueduct Storage				
• Hayfield Storage Program	150,000	150,000	-	-
• Central Arizona Banking Demonstration	30,000	80,000	-	-
Subtotal of Current Programs	**820,000**	**870,000**	**673,000**	**908,800**
Programs Under Development				
Coachella & All-American Canals Lining Projects	77,700	77,700	77,700	77,700
SDCWA Transfer	200,000	200,000	200,000	200,000
PVID Land Management Program	111,000	111,000	111,000	111,000
Off-Aqueduct Storage/Transfers				
• Cadiz Storage/Transfer Program	150,000	150,000	-	-
• Lower Coachella Storage Program	150,000	150,000	-	-
• Chuckwalla Storage Program	150,000	150,000	-	-
• Central Arizona Banking	50,000	50,000	-	-
Subtotal of Proposed Programs	**888,700**	**888,700**	**388,700**	**388,700**
Maximum Supply Capability[2]	**1,708,700**	**1,758,700**	**1,061,700**	**1,297,500**
Maximum Expected CRA Deliveries[3]	**1,250,000**	**1,250,000**	**1,061,700**	**1,250,000**

1 -- Represents expected supply capability for resource programs.
2 -- Total maximum supply capability is shown to be greater than the CRA capacity. This indicates that full CRA deliveries can be maintained even with the loss or deferral of individual programs and that Metropolitan has the operational flexibility to optimize the use of programs.
3 -- Total Colorado River Aqueduct Deliveries limited to CRA capacity (1,250,000 acre-feet per year).

COLORADO RIVER AQUEDUCT DELIVERIES
BASIC APPORTIONMENT
PRIORITY 4

SOURCE OF SUPPLY

Under the "Law of the River", Metropolitan's priorities to Colorado River water yield an annual supply that is delivered to Metropolitan's service area via its Colorado River Aqueduct (CRA). This supply is currently available and consists of a firm annual supply of 550,000 acre-feet per year, Metropolitan's fourth priority to California's basic apportionment, and available surplus water is determined annually by the Secretary of Interior (Secretary) in accordance with Metropolitan's fifth priority and surplus water contract. Metropolitan conveys Colorado River water 242 miles from its Lake Havasu intake through the CRA and distribution system to Metropolitan's terminal reservoirs. Metropolitan's terminal reservoirs include Lake Mathews, located near the City of Riverside, and Diamond Valley Lake, located near the City of Hemet.

EXPECTED SUPPLY CAPABILITY

Metropolitan's dependable water supply from its fourth priority apportionment of California's Colorado River water is expected to be 550,000 acre-feet in every of the next 20 years. In other words, it is expected that the supply would be available during all year types, including wet, average, single dry-year, and multiple dry-year weather. Although the Secretary of the Interior has allowed Metropolitan to divert surplus water and water that is unused by Arizona and Nevada under Metropolitan's fifth priority to California's apportionment in the past, these additional water supplies over the next 20 years will be provided in accordance with Interim Surplus Guidelines established in 2001. The projections of surplus Colorado River water supply are included under the discussion on Interim Surplus Guidelines.

Estimated Water Supplies Available for Metropolitan's Use
Under the Basic Apportionment - Priority 4
(acre-feet per year)

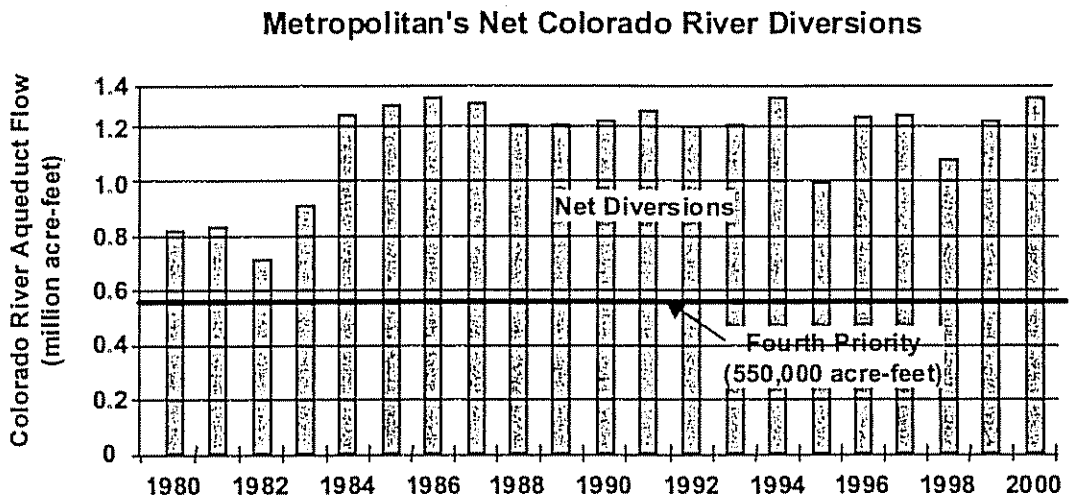
Year	Multiple Dry-years (1990-1992)	Single Dry-year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	550,000	550,000	550,000	550,000
2010	550,000	550,000	550,000	550,000
2015	550,000	550,000	550,000	550,000
2020	550,000	550,000	550,000	550,000

* --Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

Implementation Status: Water supply under Metropolitan's apportionment of Colorado River water has been delivered to Metropolitan since 1930 and by existing contract would continue to be available in perpetuity.

Historical Record: The historical record for available Colorado River water that could be diverted by Metropolitan under its fourth priority to California's apportionment is shown in the following graph. Over the last 20 years, an average of 1.212 million acre-feet per year has been available for Metropolitan's use, enabling Metropolitan to maintain a full CRA delivery capability each year. The historical record indicates that Metropolitan's fourth priority supply has been available in every year and can reasonably be expected to be available over the next 20 years.



Written Contracts or Other Proof: Metropolitan's entitlement to Colorado River water is based on the "Law of the River". The "Law of the River" is a collective body of laws, court decrees, compacts, agreements, regulations, and a international treaty that govern the distribution and management of Colorado River water. The documents that specifically determine Metropolitan's dependable supplies are as follows:

- 1931 Seven Party Agreement. The 1931 Agreement recommended California's Colorado River use priorities and has no termination date. California's basic annual apportionment is 4.4 million acre-feet. Palo Verde Irrigation District (PVID), Yuma Project (Reservation Division), Imperial Irrigation District (IID), Coachella Valley Water District (CVWD), and Metropolitan are the entities that hold the priorities. These priorities are included in of the contracts that the Department of the Interior executed with the California agencies in the 1930's for water from Hoover Dam. These priorities are shown in the following table. Metropolitan has the fourth priority to California's Basic Apportionment of Colorado River water and utilizes this water, 550,000 acre-feet per year, every year. In addition, Metropolitan has access to additional Colorado River water, up to 662,000 acre-feet per year, through its fifth priority in the California apportionment. The Secretary of the Interior determines the availability of certain fifth priority water on an annual basis. The fifth priority water consists of: (1) water apportioned to, but unused, by Arizona and Nevada, (2) surplus Colorado River water, (3) water unused by holders of priorities 1 to 3

in California, and (4) an amount of water equal to the amount conserved under the 1988 and 1989 agreements with Imperial Irrigation District.

Priority in Seven-Party Agreement and Water delivery Contracts

Priority	Description	Acre-feet Annually
1	Palo Verde Irrigation District gross area of 104,500 acres of land in the Palo Verde valley	
2	Yuma Project (Reservation Division) not exceeding a gross area of 25,000 acres in California	3,850,000
3(a)	Imperial Irrigation District and land in Imperial and Coachella Valleys[1] to be served by the All American Canal	
3(b)	Palo Verde Irrigation District – 16,000 acres of land on the Lower Palo Verde Mesa	
4	Metropolitan Water District of Southern California for use on the coastal plain	550,000
	subtotal	**4,400,000**
5(a)	Metropolitan Water District of Southern California for use on the coastal plain	550,000
5(b)	Metropolitan Water District of Southern California for use on the coastal plain[2]	112,000
6(a)	Imperial Irrigation District and land in Imperial and Coachella Valleys[1] to be served by the All American Canal	300,000
6(b)	Palo Verde Irrigation District – 16,000 acres of land on the Lower Palo Verde Mesa	
7	Agricultural Use in the Colorado River Basin in California	--
	total	**5,362,000**

[1] – The Coachella Valley Water District now serves Coachella Valley

[2] – In 1946, the City of San Diego County Water Authority, Metropolitan, and the Secretary of Interior entered into a contract that merged and added the City of San Diego's rights to storage and delivery of Colorado River water to the rights of Metropolitan. The conditions of that agreement have since been satisfied.

- Metropolitan's Basic Contracts. Metropolitan's 1930, 1931, and 1946 basic contracts with the Secretary permit the delivery of 1.212 million acre-feet per year when sufficient water is available. Metropolitan's 1987 surplus flow contract with Reclamation permits the delivery of water to fill the remainder of the Colorado River Aqueduct when water is available. Certain programs discussed subsequently are being implemented and planned to increase assurances that this water will be available.

- 1964 Court Decree. The 1964 U.S. Supreme Court Decree confirmed the Arizona, California, and Nevada basic apportionment's of 2.8 million acre-feet per year, 4.4 million acre-feet per year and 300,000 acre-feet per year, respectively. The Decree also permits the Secretary of the Interior to make water unused by one of the states available for use in the other two states. In addition, it permits the Secretary to make available.

Financing: The cost of delivering fourth priority Colorado River water is included in Metropolitan's budget. These costs are paid from water sales revenue.

Regulatory Permits for Delivery of Supply: Metropolitan's fourth priority Colorado River water is currently available. Delivery of the Basic apportionment is assured under this priority.

COLORADO RIVER AQUEDUCT DELIVERIES
INTERIM SURPLUS GUIDELINES / PRIORITY 5

SOURCE OF SUPPLY

With the implementation of Interim Surplus Guidelines (ISG), surplus Colorado River water is available to Metropolitan under its fifth priority as an annual supply on a predictable basis. The ISG allow more flexible and effective use of water in Lake Mead and provides the method for determining the availability of surplus and unused water for use in Arizona, California and Nevada during a 15-year period (2002 through 2016). Specifically, the ISG specify the priorities for Colorado River water apportioned to, but unused, by Arizona, California, and Nevada and for surplus Colorado River water in meeting the water needs of agencies including Metropolitan and Southern Nevada Water Authority. Under the ISG, Metropolitan is allowed to divert up to 1.25 million acre-feet per year of Colorado River water based on Lake Mead elevation. Water shortages in Arizona caused by the ISG could be mitigated in part by dry-year transfer options and off-stream storage funded by Metropolitan as the benefits of ISG outweigh the potential for shortages.

It should be noted that prior to the ISG, the surplus and unused Colorado River water has not been considered a dependable annual supply in Metropolitan's resources plans, as the Secretary of Interior determined the availability of such water only on a year-to-year basis based on a recommendation by the Commissioner of the Bureau of Reclamation.

EXPECTED SUPPLY CAPABILITY

In the certified Final Environmental Impact Statement (EIS) for the ISG, the U.S. Bureau of Reclamation (Bureau) reported the results of its simulation of Colorado River deliveries and Lake Mead operations under the ISG and estimated the available ISG water over the next twenty years. Based on the Bureau's methodology utilized in the EIS, the available water supplies under the ISG for Metropolitan's use are as follows:

Estimated Water Supplies Available for Metropolitan's Use
Under the Interim Surplus Guidelines
(acre-feet per year based on Bureau's methodology utilized in FEIS)

Year	Multiple Dry-years (1990-1992)	Single Dry-year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	247,800	486,500	449,300	486,500
2010	311,800	311,800	210,900	335,300
2015	363,000	-	179,500	315,300
2020	-	-	33,000	268,800

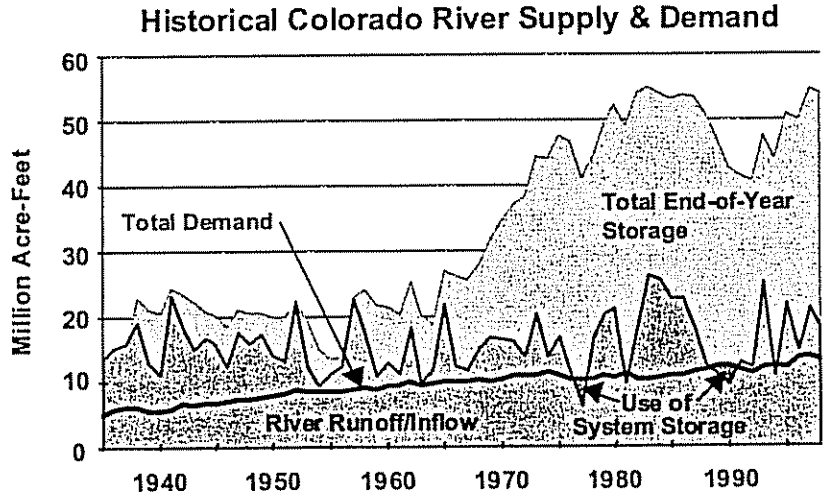
* After 2016 the ISG are no longer in effect and the availability of surplus and unused Colorado River water is determined by the Secretary on an annual basis and delivered under Metropolitan's Priority 5 entitlement.

* Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

Implementation Status: The ISG has been implemented in January 2002 and extends through December 2016.

Historical Record: The historical record of demands, annual runoff, and storage conditions in the Colorado River system demonstrate that opportunities exist to manage the River's reservoirs more efficiently, providing Arizona, California, and Nevada with more predictable water supply for an interim period. The historical record is depicted below. Currently, the average Colorado River runoff exceeds basin-wide demands by over 1 million acre-feet per year. The total storage capacity in the Colorado River Basin is approximately 60 million acre-feet, almost four times the River's average annual flow. As of the end of December 2001, total storage in system reservoirs was over 44 million acre-feet, about 76% of capacity.



Written Contracts or Other Proof:

- Adoption of Interim Surplus Guidelines. The Interim Surplus Guidelines were approved by the Secretary of the Interior on January 16, 2001. The ISG are effective for a 15-year term (2002 – 2016). The ISG are subject to suspension if aggregate use of Colorado River water by the Palo Verde Irrigation District, Yuma Project Reservation Division, Coachella Valley Water District and Imperial Irrigation District is not reduced to meet specified targets by the specified dates.
- Agreement with Arizona. The Metropolitan-Arizona Interim Surplus Guidelines Agreement was executed in May 2001. Under this agreement, Metropolitan would mitigate Colorado River shortages in Arizona due to the ISG.
- Agreement with Nevada. Authorization to enter into a proposed Metropolitan Interim Surplus Guidelines Agreement with Southern Nevada Water Authority is anticipated to be considered by the Metropolitan Board in April 2002. This agreement would establish the allocation of unused Arizona water and determine the priority for storing water in the Arizona Water Bank between Metropolitan and Southern Nevada Water Authority.

Financing: The cost of delivering the ISG water supply is included in Metropolitan's annual O&M budget and long-range financial plan.

Federal, State and Local Permits/Approvals:

- EIS for ISG. The Final Environmental Impact Statement for Interim Surplus Guidelines published by the U. S. Bureau of Reclamation in the Record of Decision approved on January 16, 2001.

COLORADO RIVER AQUEDUCT DELIVERIES
IID - METROPOLITAN CONSERVATION PROGRAM

SOURCE OF SUPPLY

The IID-Metropolitan Conservation Program provides an annual supply that is delivered to Metropolitan's service area via its CRA over a minimum 35-year period following full program implementation. In 1988, Metropolitan executed a Conservation Agreement to fund water efficiency improvements within the Imperial Irrigation District's (IID) service area in return for the right to divert the water conserved by those improvements. The program implemented structural and non-structural measures, including the concrete lining of existing canals, the construction of local reservoirs and spill-interceptor canals, installation of non-leak gates, and automation of the distribution system. Other implemented projects include the delivery of water to farmers on a 24-hour basis and improvements in on-farm water management through the installation of tailwater pumpback systems, drip irrigation systems, and linear-move irrigation systems.

EXPECTED SUPPLY CAPABILITY

The IID-Metropolitan Conservation Program has been operational since 1990 and is expected to yield 110,000 acre-feet per year of conserved water in the future under the proposed Quantification Settlement (QSA). Metropolitan and Coachella Valley Water District would share in the use of this conserved water. Metropolitan's dependable water supply from the IID-Metropolitan Conservation Program would be 90,000 acre-feet in each of the next 20 years. In other words, it is expected that this supply would be available to Metropolitan during various hydrologic conditions, including wet, average, single dry-year, and multiple dry-year weather. The remaining conserved water (20,000 acre-feet per year) would be available to Coachella Valley Water District.

Estimated Water Supplies Available for Metropolitan's Use
Under the IID - Metropolitan Conservation Program
(acre-feet per year)

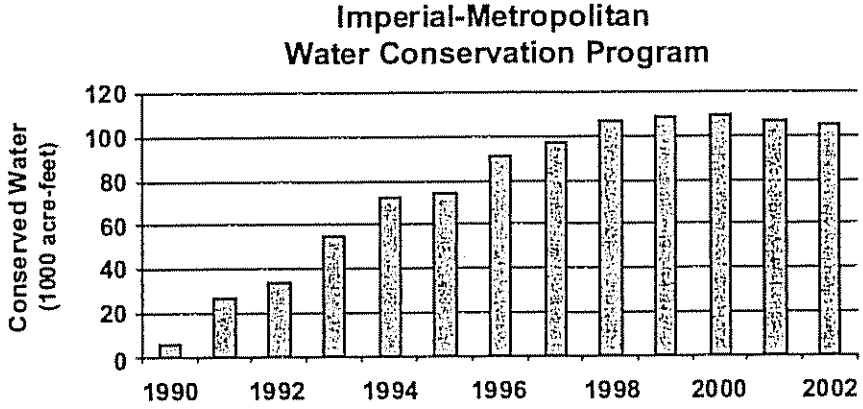
Year	Multiple Dry-years (1990-1992)	Single Dry-year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	90,000	90,000	90,000	90,000
2010	90,000	90,000	90,000	90,000
2015	90,000	90,000	90,000	90,000
2020	90,000	90,000	90,000	90,000

* --Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

Implementation Status: The IID-Metropolitan Conservation Program has been operational since 1990 and by existing agreements will continue to be in place with a possible extension to 2077 with implementation of the QSA.

Historical Record: The historical record for conserved water that has been diverted by Metropolitan under the IID-Metropolitan Conservation Program is shown in the following graph. With operations beginning in 1990, the program has conserved up to 106,880 acre-feet per year to date and will reach an expected yield of 110,000 acre-feet per year in 2003. The historical record indicates that Metropolitan's expected supply of 90,000 acre-feet per year has been available since 1996 and would be available over the next 20 years and beyond.



Written Contracts or Other Proof: Metropolitan's annual supply from the IID-Metropolitan Conservation Program is primarily based on three agreements.

- 1988 IID-Metropolitan Conservation and Use of Conserved Water Agreement. This Agreement was executed in December 1988 by Imperial Irrigation District and Metropolitan for a 35-year term following completion of program implementation (1998 – 2033).
- 1989 Approval Agreement. This Agreement secured the approval of Palo Verde Irrigation District and Coachella Valley Water District to not divert an amount of water equal to the amount conserved except under limited circumstances. The Agreement was executed in December 1989.
- 1989 Supplemental Approval Agreement. This Agreement was executed in December 1989 between Metropolitan and Coachella Valley Water District to coordinate Colorado River diversions and the use of the conserved water provided by the Program.
- Key Terms for the Quantification Settlement Agreement. The Key Terms for the Quantification Agreement were signed by the State of California, Metropolitan, Imperial Irrigation District, and Coachella Valley Water District in October 1999. These key terms provide the basis for completing detailed agreements to quantify the rights and uses of Colorado River water with respect to Priorities 3a and 6a of the 1931 California Seven-Party Agreement. Included in the Key Terms is the provision that approximately 90,000 acre-feet per year of water obtained through this Program would continue to be available to Metropolitan for an extended term ending in 2077. The remainder of the conserved water from this program (20,000 acre-feet per year) would be available to CVWD.

Financing: The water efficiency improvements under this Program have already been funded, constructed and put into operation. The cost of delivering the conserved water under the IID-Metropolitan Conservation Program is included in Metropolitan's 10-year capital and O&M budget.

Federal, State and Local Permits/Approvals: A comprehensive environmental review process supported implementation.

- EIR for Program. The Imperial Irrigation District Board certified the final Environmental Impact Report for the Program in December 1986.
- EIR for Supplemental Program. The Imperial Irrigation District Board certified the final Environmental Impact Report for the Supplemental Program in June 1994.

COLORADO RIVER DELIVERIES
HAYFIELD GROUNDWATER STORAGE PROJECT

SOURCE OF SUPPLY

The Hayfield Groundwater Storage Project (Hayfield Project) is planned to supply up to 150,000 acre-feet annually during dry year or non-surplus Colorado River conditions. The Hayfield Project is also planned to provide additional supplemental supplies from previously stored CRA water during normal year conditions. During wet and surplus years, Metropolitan would replenish the Hayfield Project from the CRA.

EXPECTED SUPPLY CAPABILITY:

It is estimated that the Hayfield aquifer can hold up to 800,000 acre-feet of additional CRA water. This water could be extracted during dry year conditions at a rate of up to 150,000 acre-feet per year. This supply would be available to Metropolitan in any year, but delivery is constrained by the existing capacity of the CRA. Incremental deliveries of water to the CRA from the Hayfield Project can be made during wet or normal years depending on operating conditions along the CRA. For example, the Hayfield Project may provide operational efficiencies in meeting delivery obligations at Whitewater or other locations along the CRA.

RATIONALE FOR EXPECTED SUPPLY

As an integral part of the Colorado River resource strategy for storage programs, the Hayfield Project could be used to assist in keeping the CRA full in 2010 and following years when surpluses may not be available. The water supply available to Metropolitan is presented below:

Estimated Water Supplies Available for Metropolitan's Use
Under the Hayfield Groundwater Storage Program
(acre-feet per year)

Year	Multiple Dry-years (1990-1992)	Single Dry-year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	75,000	75,000	-	-
2010	150,000	150,000	-	-
2015	150,000	150,000	-	-
2020	150,000	150,000	-	-

* -- Represents expected supply capability for the resource program.

Program Facilities: The Hayfield Program would consist of facilities in two general areas, as follows:

- 390 acres of spreading basins;
- A well field, consisting of 40 new wells to extract water from the aquifer and pump it back to the Colorado River Aqueduct;

Historical Record: Metropolitan's Board of Directors implemented the Hayfield Project in April 1999. Approximately 65,000 acre-feet of water have been stored in the Hayfield aquifer since the Project was approved.

Written Contracts or Other Proof: The Hayfield Project has been implemented as a component of California's Colorado River Water Use Plan. The following Actions have occurred:

- 1998 Memorandum of Understanding (MOU) between Metropolitan and the U. S. Department of the Interior Bureau of Land Management (BLM). This MOU describes the intent of both Metropolitan and the BLM to exchange properties overlying the Hayfield Basin in order to support the implementation of the Hayfield Project. Approximately 3,800 acres of Federally owned property in the Hayfield valley would be exchanged with like properties held by Metropolitan. The purpose of this exchange of properties is to better manage the underlying groundwater resource and protect water quality.
- April 1999 Board of Directors Adoption of the CEQA Document. Metropolitan's Board of Directors adopted the Mitigated Negative Declaration for the Hayfield Project at their regularly scheduled Board of Directors meeting in April 1999.
- June 2000 Board of Directors Approval of the Hayfield Project. Metropolitan's Board of Directors approved the Hayfield Project and appropriated an additional $7.35 million for land acquisition, preliminary design, continued water quality monitoring, additional aquifer testing and other tasks. The Board authorized storage of up to 800,000 acre-feet of CRA water.
- October 2001 Reimbursement Agreement Number 4600001909 from the California Department of Water Resources. Metropolitan and the Department of Water Resources entered into a Reimbursement Agreement in accordance with the California Water Code Section 15262. This section of Water Code calls for the DWR to reimburse up to $35 million for groundwater conjunctive use programs along the Colorado River Aqueduct. This Agreement was effective October 9, 2001.

Financing: The capital cost of the Hayfield Project is estimated to be approximately $67.7 million. This budget is included in Metropolitan's 10-year capital budget and would be financed through a combination of bonds and water sales revenue. A portion of this capital cost would be reimbursed to Metropolitan from Agreement No. 4600001909 with the DWR.

Federal, State and Local Permits for Construction: Metropolitan has applied and requested the all-appropriate Federal, State and Local permits for construction. For example, Metropolitan is currently conducting long term water quality baseline monitoring in support of a possible Source Water Permit application from the Department of Health Services. Monitoring wells and production wells were completed in accordance with Riverside County permitting procedures. Necessary environmental permits would be acquired as needed.

Estimated Water Supplies Available for Metropolitan's Use
Under the Arizona Groundwater Banking Program
(acre-feet per year)

Year	Multiple Dry-years (1990-1992)	Single Dry-year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	30,000	80,000	-	-
2010	80,000	130,000	-	-
2015	80,000	130,000	-	-
2020	80,000	130,000	-	-

* -- Includes the demonstration and long-term program

* -- Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

Historical Record: This Program is one of many identified in California's Colorado River Water Use Plan. As of December 2000, Metropolitan has a storage account balance of 89,000 acre-feet under the demonstration program of which about 80,000 acre-feet is available for return to Metropolitan (after losses). While water has been stored, it has not been necessary to have it withdrawn to date and remains available for use in the future.

Written Contracts or Other Proof:

- 1992 Central Arizona Water Conservation District-Metropolitan Agreement. This Agreement was executed in 1992 by Central Arizona Water Conservation District and Metropolitan to store unused Colorado River water in the groundwater basins underlying central Arizona through 2000.

- 1999 Department of the Interior final rule. This final rule established a framework for the Secretary to follow in considering, participating in, and administrating new storage and interstate release agreements among entities in Arizona, California and Nevada.

Financing: The estimated cost of this program, approximately $314 million, would be paid from Metropolitan's Water Transfer Fund.

Federal, State, and Local Permits for Construction: The project which is the subject of the 1992 agreement was exempt from the provisions of CEQA as it consisted of a minor alterations of the operation of existing facilities. The Bureau of Reclamation issued a Final Programmatic Environmental Assessment for the 1999 final rule. A Finding of No Significant Impact was prepared as part of completion of the NEPA process for the final rule.

COLORADO RIVER DELIVERIES
ALL AMERICAN CANAL AND COACHELLA CANAL LINING PROJECTS

SOURCE OF SUPPLY

The All American Canal and Coachella Canal Lining Projects can provide an annual supply that is delivered to Metropolitan's service area via the Colorado River Aqueduct. In 1988, Public Law 100-675 authorized the Secretary of the Interior to reduce seepage from portions of the existing earthen All American Canal and to concrete line the Coachella Canal. The All American Canal Lining Project consists of constructing a concrete-lined canal parallel to 23 miles of the existing All American Canal from Pilot Knob to Drop 3. The Coachella Canal Lining Project consists of lining 33 miles of the Coachella Canal from Siphon 7 to 14 and from Siphon 32. The law also authorized the Secretary to enter into a construction or funding agreement with one or more of the California contractors holding a delivery contract for Colorado River water.

EXPECTED SUPPLY CAPABILITY

Under the proposed Quantification Settlement Agreement (QSA), the All American Canal and Coachella Canal Lining Projects are expected to yield 77,700 acre-feet per year of supply to Metropolitan's service area via the Colorado River Aqueduct other than when surplus Colorado River water is available for California's use when IID elects to use such water and such use does not adversely affect Metropolitan. Metropolitan would receive 56,200 acre-feet per year from the All American Canal Lining Project and 21,500 acre-feet per year from the Coachella Canal Lining Project for up to 75 years. The water supply that would be available to Metropolitan is presented below:

Estimated Water Supplies Available for Metropolitan's Use
Under the Coachella & All American Canal Lining Project
(acre-feet per year)

Year	Multiple Dry-years (1990-1992)	Single Dry-year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	21,500	21,500	21,500	21,500
2010	77,700	77,700	77,700	77,700
2015	77,700	77,700	77,700	77,700
2020	77,700	77,700	77,700	77,700

* – Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

Implementation Status: A request for Proposals for professional consulting services in the design of canals, project management support and environmental documentation services is scheduled to be issued in February 2002 for the Coachella Canal Lining Project. A draft Advance Funding Agreement to complete the environmental mitigation plan and initiating the All American Canal Lining Project Management is under consideration.

Written Contracts: The following actions have been taken to proceed toward project implementation.

- 1988, Public Law 100-675. Authorized the Department of the Interior to reduce seepage from the existing earthen All American and Coachella Canals.
- 2001, California Department of Water Resources-Metropolitan Funding Agreement. Reimburse Metropolitan for project work necessary to construct the lining of the Coachella Canal in an amount not to exceed $74 million.
- 2001 California Department of Water Resources-IID Funding Agreement. Reimburse Imperial Irrigation District for project work necessary to construct a lined All American Canal in an amount not exceed $126 million.

Financing: The construction cost of lining the All American Canal and the Coachella Canal are included in Metropolitan's long-range financial plan and capital investment plan. Metropolitan would initially fund these projects. Up to $200 million of the costs of constructing the projects would be reimbursed by the State of California in accordance with the executed funding agreements.

Federal, State and Local Permits for Construction:

- March 1994. The Bureau of Reclamation released the Final EIS/EIR for the All American Canal lining Project.
- April 2001. The Bureau of Reclamation released the Final EIS/EIR for the Coachella Canal Lining Project.

COLORADO RIVER DELIVERIES
IID/SAN DIEGO WATER TRANSFER

SOURCE OF SUPPLY

On April 29, 1998, the Imperial Irrigation District (IID) and the San Diego County Water Authority (Authority) executed the Agreement for Transfer of Conserved Water (Transfer Agreement). Under this market-based transaction, the Authority would pay IID a unit price to arrange for water to be conserved within its service area and transfer the conserved water to the Authority. To conserve water IID would (i) contract with landowners in its service area to undertake water conservation efforts and reduce its use of Colorado River water, and/or (ii) make improvements to its distribution system in order to reduce system losses. To facilitate the Authority's receipt of water from IID, in November 1998 Metropolitan and the Authority entered into an Exchange Agreement under which the Authority would transfer the water received from IID to Metropolitan for diversion into the Colorado River Aqueduct. In exchange, Metropolitan would deliver to the Authority a like amount and quality of water from whatever sources and using such facilities as Metropolitan determines.

EXPECTED SUPPLY CAPABILITY

Under the Exchange Agreement Metropolitan would annually receive from 130,000 to 200,000 acre-feet of Colorado River water for diversion into the Colorado River Aqueduct depending on the final amount of water IID conserves and transfers to the Authority under the Transfer Agreement. Assuming the maximum, 200,000 acre-feet of water would be available annually by the year 2011. The Transfer Agreement between the Authority and IID has an initial term of 45 years and may be extended for a total of 75 years. The Exchange Agreement between Metropolitan and the Authority has a term of 30 years. The first increment of 20,000 acre-feet may be available as soon as 2003 would steadily increase to 200,000 acre-feet per year. The maximum water supply that would be available to Metropolitan is presented below:

Estimated Water Supplies Available for Metropolitan's Use
Under the IID/San Diego Water Transfer Program
(acre-feet per year)

Year	Multiple Dry-years (1990-1992)	Single Dry-year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	85,000	85,000	85,000	85,000
2010	180,000	180,000	180,000	180,000
2015	200,000	200,000	200,000	200,000
2020	200,000	200,000	200,000	200,000

* – Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

Historical Record: Under 1988 IID-Metropolitan Conservation and Use of Conserved Water Agreement, IID has been conserving water within its service area at Metropolitan's costs and

making the conserved water available for diversion by Metropolitan. With operations beginning in 1990, the program has conserved up to 106,880 acre-feet per year to date.

Written Contracts or Other Proof: Metropolitan's annual supply from the proposed IID/Authority transfer is based primarily on two agreements.

- 1998 Agreement for Transfer of Conserved Water by and between IID and the Authority. This Agreement provides for a market-based transaction in which the Authority would pay IID a unit price for water conserved by IID and transferred to the Authority.
- 1998 Authority/Metropolitan Exchange Agreement. This Agreement provides for the Authority to transfer the water received from IID to Metropolitan for diversion into the Colorado River Aqueduct. In exchange, Metropolitan would deliver to the Authority a like amount and quality of water from whatever sources and using such facilities as Metropolitan determines.

Financing: Under the first 20 years of the Exchange Agreement the Authority would pay to Metropolitan $90 (increasing by 1.55 percent for every year after 1998) for each acre foot Metropolitan delivers to the Authority in exchange for receiving water conserved by IID. During the final 10 years of the Exchange Agreement the Authority would pay to Metropolitan $80 (increasing by 1.44 percent for every year after 1998) for each acre foot Metropolitan delivers to the Authority in exchange for receiving water conserved by IID. To offset the discount provided by Metropolitan to the Authority under the Exchange Agreement, the State Legislature and the Governor approved SB 1765 in 1998, which appropriated $200 million from the State's General Fund for the lining of the All-American and Coachella canals and appropriated $35 million to help fund groundwater storage projects along the Colorado River Aqueduct. Assuming Metropolitan receives the yield form these projects, the State appropriations would make Metropolitan financially whole with respect to the Exchange Agreement.

Federal, State and Local Permits/Approvals: Several environmental reviews and permits are sought by IID before it would implement the transfer program.

- EIR/EIS for Program. IID released its Draft EIR/EIS for the program on January 18, 2002 and is scheduled to certify and approve the document in December 2002. The Bureau of Reclamation is scheduled to issue a Record of Decision on this project by late 2002.
- Habitat Conservation Plan (HCP). IID has prepared a Draft HCP to cover activities under the IID/Authority Water Transfer Agreement as well as well as IID's routine operations and maintenance activities. The U.S. Fish and Wildlife Service and the California Department of Fish and Game are scheduled to approve the HCP by December 2002.
- State Water Resources Control Board (SWRCB) Petition. IID has requested the SWRCB to make certain findings before it would implement the IID/Authority Water Transfer Agreement. The hearing process has been initiated and the findings are anticipated to be made by December 2002.

COLORADO RIVER DELIVERIES
PALO VERDE IRRIGATION DISTRICT LAND MANAGEMENT, CROP ROTATION AND WATER SUPPLY PROGRAM

SOURCE OF SUPPLY

The Palo Verde Irrigation District (PVID) and Metropolitan have entered into Principles of Agreement for a land management, crop rotation and water supply Program. Metropolitan would develop a flexible water supply for 35 years and assist in stabilizing the local farm economy in the Palo Verde Valley. PVID has the first priority for Colorado River use under the U.S. water delivery contracts.

EXPECTED SUPPLY CAPABILITY

It is estimated that the PVID/Metropolitan Program will provide up to 111,000 acre-feet per year of additional Colorado River water. This water would be available in any year as needed and in accordance with the provisions described in the Principles of Agreement. The water supply available to Metropolitan is presented below:

Estimated Water Supplies Available for Metropolitan's Use
Under the Palo Verde Irrigation District Land Management,
Crop Rotation and Water Supply Program
(acre-feet per year)

Year	Multiple Dry-years (1990-1992)	Single Dry-year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	111,000	111,000	111,000	111,000
2010	111,000	111,000	111,000	111,000
2015	111,000	111,000	111,000	111,000
2020	111,000	111,000	111,000	111,000

* – Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

Historical Record: Metropolitan and PVID have tested the concept of developing a water supply for Metropolitan by entering into an agreement in 1992. Agreements with landowners and lessees in the Palo Verde Valley to forego irrigation for a two year period from August 1992 to July 1994. Water unused by PVID, in the amount of 186,000 acre-feet was stored in Lake Mead for Metropolitan. Both PVID and Metropolitan signed approved Principles of Agreement in 2001. The environmental documentation for this Agreement is scheduled to be complete in the summer of 2002. The next part of the program is to enter into agreements through which the farmers would manage lands and rotate crops making a water supply available to Metropolitan.

Written Contracts or Other Proof:

- 2001 Principles of Agreement. Metropolitan's Board of Directors approved Principles of Agreement in 2001.

Financing: The cost of the PVID/Metropolitan Program is included in Metropolitan's O&M budget and would be funded from the Water Transfer Fund.

Federal, State and Local Permits: A Notice of Preparation for the PVID/Metropolitan Program was published on October 29, 2001. The CEQA documentation is anticipated to be completed by July 2002.

COLORADO RIVER DELIVERIES
CADIZ GROUNDWATER STORAGE AND DRY-YEAR SUPPLY PROGRAM

SOURCE OF SUPPLY

The Cadiz Program would store surplus Colorado River water, as available, during wet and normal hydrological cycles. During dry years, the program would deliver stored water to the Colorado River Aqueduct to keep the aqueduct full as one element of California's Colorado River Water Use Plan. The program also provides a new source of supply to Metropolitan through the transfer of native groundwater from the aquifer underlying the Cadiz and Fenner Valleys. The Cadiz Program would have a term of 50 years.

EXPECTED SUPPLY CAPABILITY

A pilot demonstration program estimated that the aquifer could store up to 1 million acre-feet of surplus Colorado River water for later recovery. Program facilities would be able to deliver 200 cfs of water (nearly 150,000 acre-feet per year) to the spreading basins. When needed to meet demands, the program would have the capacity to deliver 200 cfs of water back to the Colorado River Aqueduct. In addition to conjunctive use of the basin, transfer of native groundwater would be permitted. The total amount of transfer water could range from 300,000 acre-feet up to 1.5 million acre-feet. The amount ultimately transferred is subject to the terms of a groundwater management plan that would be implemented as part of the program. The program is scheduled to be on-line by 2010. The water supply that would available to Metropolitan under this program is presented below:

Estimated Water Supplies Available for Metropolitan's Use
Under the Cadiz Water Transfer & Dry-year Supply Program
(acre-feet per year)

Year	Multiple Dry-years (1990-1992)	Single Dry-year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	-	-	-	-
2010	150,000	150,000	-	-
2015	150,000	150,000	-	-
2020	150,000	150,000	-	-

* -- Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

Program Facilities: The Cadiz Program would consist of facilities in five general areas, as follows:

- 390 acres of spreading basins;

- Water conveyance facilities, including approximately 35 miles of pipeline and a pumping station, to pump water from the Colorado River Aqueduct to the spreading basins;
- A well field, consisting of 27 new wells and rehabilitation of 3 existing wells, to extract water from the aquifer and pump it back to the Colorado River Aqueduct;
- Power distribution facilities between the Colorado River Aqueduct and the spreading basins; and
- Groundwater basin monitoring and data gathering facilities located throughout the Cadiz and Fenner Valleys.

Written Contracts or Other Proof: The following actions have been taken to implement the program.

- July 1998 – Principles of Agreement. The Board of Directors approved Principles of Agreement between Metropolitan and Cadiz Inc. for a conjunctive use and transfer program.
- October 1998 – Preparation of Technical and Environmental Studies. The Board of Directors approved entering into agreements to prepare necessary feasibility studies and environmental documentation for project implementation.
- April 2001 – Approval of Definitive Economic Terms and Preparation of Final Contract with Cadiz Inc.. The Board approved a framework of economic terms and directed the General Counsel to negotiate final contracts with Cadiz Inc. for program implementation and operation.

Financing: The Board appropriated $2.5 million for completion of necessary technical and environmental studies. If the program were approved, the Board would be requested to appropriate additional funds under the capital investment plan. Metropolitan and Cadiz Inc. would share the construction cost of the program equally. Metropolitan's share of the program capital cost would be $75 million and Cadiz Inc.'s share would be $75 million. Metropolitan's share of construction cost would be funded with bonds, while other payments, including payments to Cadiz would come from the Water Transfer Fund

Federal, State and Local Permits for Construction: Permits that may be required for construction:
United States Bureau of Land Management.

- Conformity Determination pursuant to the Federal Clean Air Act (completed)
- Permits for use of land for geotechnical exploration
- Permits for construction areas and associated activity, including paleontological field studies
- Amendment for an exception to the utility corridor requirements of the California Desert Conservation Area Plan
- Right-of-way grants for conveyance facilities, power distribution line, and monitoring facilities

United States Fish and Wildlife Service.

- Section 7 consultation pursuant to the Endangered Species Act

United States National Park Service.

- Special use permits for installation of monitoring facilities in the Mojave National Preserve

California Department of Fish and Game.

- Section 1601 permit pursuant to the Fish and Game Code (Streambed Alteration Agreement)
- Section 2081 permit or Section 2080.1 consistency determination pursuant to the California Endangered Species Act

Regional Water Quality Control Board.

- Permit for construction water discharge certification for placement of fill

State Lands Commission.

- Construction easement
-

Environmental Review: An extensive environmental review process has been performed, as chronicled below. It is anticipated that a board workshop would be held in March 2002, and the final environmental documents would be presented for board certification in April 2002.

- Notice of Preparation of an EIR/EIS published February 1999
- Scoping meetings held February 1999 (project site and Twentynine Palms) and May 1999 (Needles)
- Circulated Draft EIR/EIS November 1999
- Public hearings on Draft EIR/EIS held in December 1999 at the project site, Twentynine Palms and Needles
- Circulated Supplement to Draft EIR/EIS October 2000
- Public hearings on Supplement Draft EIR/EIS was held October 2000 (Barstow), November 2000 (Twentynine Palms) and December 2000 (Los Angeles)
- Released Final EIR/EIS September 2001

Regulatory Permits for Delivery of Supply: Metropolitan may be required to amend its source water permit issued by the California Department of Health Services at the time it introduces transferred groundwater into the Colorado River Aqueduct.

COLORADO RIVER DELIVERIES LOWER COACHELLA VALLEY GROUNDWATER STORAGE PROGRAM

SOURCE OF SUPPLY

Metropolitan has identified the feasibility of developing a conjunctive use storage program in the Lower Coachella groundwater basin. The basin is currently in an over-drafted condition. The Lower Coachella groundwater basin underlies the service area of the Coachella Valley Water District (CVWD). The CVWD transports its Colorado River entitlement by way of the All American and Coachella Canal systems. The projected growth for the CVWD service area is expected to gradually increase to a build out to 2015. Between 2002 and 2015, there exists the opportunity to transport and store additional supplies for Metropolitan's use during dry year conditions.

EXPECTED SUPPLY CAPABILITY

The Program has potential to provide up to 500,000 acre-feet of storage capacity. The Program is expected to produce 100,000 to 175,000 acre-feet per year of dry year supplies with a scheduled on-line date by 2015, the water supply that could be available to Metropolitan is presented below:

Estimated Water Supplies Available for Metropolitan's Use Under the Lower Coachella Groundwater Storage Program
(acre-feet per year)

Year	Multiple Dry-years (1990-1992)	Single Dry-year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	-	-	-	-
2010	-	-	-	-
2015	150,000	150,000	-	-
2020	150,000	150,000	-	-

* -- Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

This Program is one of many identified in California's Colorado River Water Use Plan. If implemented, it would assist in positioning California to reduce its use of Colorado River water.

The storage and dry-year program capacity does not influence the ability to maintain a full Colorado River Aqueduct in the future. However, the use of Colorado River water to put water into the Lower Coachella Valley Storage Program may be influenced by other Colorado River related storage/transfer programs. Program storage and

extraction capacities as well as up-front payments and capital outlays for construction may impact Metropolitan's budget.

Written Contracts or Other Proof: The terms of the proposed program agreement must be negotiated with CVWD.

Financing: This program would be funded through the Water Transfer Fund

Environmental Review: The implementation of a groundwater storage project in Coachella Valley could result in the availability of additional Colorado River water to allow for the reduction in groundwater use so that current rates of groundwater overdraft would be reduced. The feasibility report identified the environmental checklist in accordance to CEQA guidelines.

COLORADO RIVER DELIVERIES
UPPER CHUCKWALLA GROUNDWATER STORAGE PROGRAM

SOURCE OF SUPPLY

The Upper Chuckwalla Groundwater Basin Feasibility Study (Chuckwalla Study) was identified in Phase I investigations as a groundwater basin along the Colorado River Aqueduct having the potential to store available supplies of CRA water. Up to 150,000 acre-feet per year would be returned to the CRA in dry years or non-surplus Colorado River conditions. Metropolitan has initiated the Chuckwalla Study, which will investigate the potential for such a program. During wet and surplus years, Metropolitan would replenish the Upper Chuckwalla Basin with available deliveries from the CRA. The Upper Chuckwalla Valley is located near Metropolitan's Eagle Mountain Pumping Plant.

EXPECTED SUPPLY CAPABILITY:

It is estimated that the Upper Chuckwalla groundwater basin could hold up to 500,000 acre-feet of CRA water. This water would be extracted during dry year conditions at a rate of up to 150,000 acre-feet per year. This supply would be available to Metropolitan in any year, but delivery is constrained by the existing capacity of the CRA with a scheduled on-line date by 2015, the water supply that would be available to Metropolitan under this program is presented below:

Estimated Water Supplies Available for Metropolitan's Use
Under the Upper Chuckwalla Groundwater Storage Program
(acre-feet per year)

Year	Multiple Dry-years (1990-1992)	Single Dry-year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	-	-	-	-
2010	-	-	-	-
2015	150,000	150,000	-	-
2020	150,000	150,000	-	-

* – Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY:

As an integral part of the Colorado River resource strategy for storage programs, deliveries of water previously stored under the Chuckwalla Project would be used to assist in keeping the CRA full in 2015 and the following years during dry years.

Program Facilities: The Chuckwalla Project would consist of facilities in three general areas, as follows:

- 400 acres of spreading basins;

- Water conveyance facilities, including approximately 10 miles of pipeline and a pumping station, to pump water from the extraction wells to the Colorado River Aqueduct; and
- A well field, consisting of 40 new wells to extract water from the aquifer and pump it back to the Colorado River Aqueduct.

Historical Record: Metropolitan's Board of Directors approved the Chuckwalla Study in June 2000. A consultant has been selected and has begun conducting this feasibility study. The Chuckwalla Study is scheduled to be completed in 2003

Written Contracts or Other Proof: The Chuckwalla Study has been initiated as a potential component of California's Colorado River Water Use Plan. The following actions have occurred:

- 1998 Phase I Feasibility Report for Offstream Storage on the Colorado River Aqueduct. This Report identified the Upper Chuckwalla Basin as having the potential for offstream storage of CRA water.
- June 2000 Board of Directors Approved the Upper Chuckwalla Feasibility Study. Metropolitan's Board of Directors approved the Upper Chuckwalla Feasibility Study, made a CEQA determination and appropriated $2 million to complete geophysical, hydrogeological, infiltration, water quality and risk assessment investigations for the study.
- June 2001 Department of Water Resources awarded Metropolitan an AB 303 Study Grant of $250,000 to complete the Upper Chuckwalla Feasibility Investigations. In accordance with AB 303, a planning grant of $250,000 was awarded to Metropolitan for the Upper Chuckwalla Feasibility Study. Metropolitan is currently executing the contract for this grant.
- March 2001 Consultant Contract Awarded. Metropolitan's Board of Directors approved a contract to conduct feasibility investigations. An agreement was executed in May 2001.

Financing: The cost of the Upper Chuckwalla Feasibility Study is estimated to be approximately $2 million. This amount is included in Metropolitan's 10 year capital and O&M budget. In addition, an AB 303 planning grant of $250,000 will be reimbursed to Metropolitan by contract with the DWR.

Federal, State and Local Permits for Construction: Metropolitan would acquire all appropriate Federal, State and Local permits for construction. For example, Metropolitan is currently conducting long term water quality baseline monitoring in support of a possible Source Water Permit application from the Department of Health Services. Monitoring wells and production wells would be completed in accordance with Riverside County permitting procedures. Additional necessary environmental permits would be acquired as needed.

California Aqueduct Deliveries

California Aqueduct Deliveries

Program Capabilities*
Year 2005
(acre-feet per year)

Programs	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
Current Programs				
SWP Deliveries (Historical)	794,700	418,000	1,549,100	1,741,000
San Luis Reservoir Carryover	-	50,000	128,600	-
Advance Delivery with Coachella Valley WD and Desert WA	24,600	12,300	46,100	61,200
Semitropic Program	45,000	35,000	-	-
Arvin Edison Program	42,000	40,000	-	-
San Bernardino Valley MWD Program	54,000	70,000	57,000	80,000
Spot Market Transfers	**	**		
Subtotal of Current Programs	**960,300**	**625,300**	**1,780,800**	**1,882,200**
Programs Under Development				
Delta Improvements	-	-	-	-
Kern Delta WD Program	30,000	30,000	-	-
Additional Transfers/Storage • San Bernardino Valley MWD Conjunctive-use Program • Westside Valley Transfers • Eastside Valley Transfers	20,000	20,000	20,000	20,000
Subtotal of Proposed Programs	**50,000**	**50,000**	**20,000**	**20,000**
Maximum Supply Capability	**1,010,300**	**675,300**	**1,800,800**	**1,902,200**

* -- Represents expected supply capability for resource programs.
** -- Purchase on as-needed basis.

California Aqueduct Deliveries

Program Capabilities*
Year 2010
(acre-feet per year)

Programs	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
Current Programs				
SWP Deliveries (Historical)	794,700	418,000	1,549,100	1,741,000
San Luis Reservoir Carryover	55,800	50,000	131,000	-
Advance Delivery with Coachella Valley WD and Desert WA	24,600	12,300	46,100	61,200
Semitropic Program	45,000	35,000	-	-
Arvin Edison Program	42,000	40,000	-	-
San Bernardino Valley MWD Program	54,000	70,000	57,000	80,000
Spot Market Transfers	**	**		
Subtotal of Current Programs	**1,016,100**	**625,300**	**1,783,200**	**1,882,200**
Programs Under Development				
Delta Improvements	45,000	45,000	45,000	45,000
Kern Delta WD Program	50,000	50,000	-	-
Additional Transfers/Storage • San Bernardino Valley MWD Conjunctive-use Program • Westside Valley Transfers • Eastside Valley Transfers	150,000	150,000	20,000	20,000
Subtotal of Proposed Programs	**245,000**	**245,000**	**65,000**	**65,000**
Maximum Supply Capability	**1,261,100**	**870,300**	**1,848,200**	**1,947,200**

* -- Represents expected supply capability for resource programs.
** -- Purchased on an as-needed basis.

California Aqueduct Deliveries

Program Capabilities*
Year 2015
(acre-feet per year)

Programs	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
Current Programs				
SWP Deliveries (Historical)	794,700	418,000	1,538,100	1,741,000
San Luis Reservoir Carryover	25,800	75,000	82,700	-
Advance Delivery with Coachella Valley WD and Desert WA	24,600	12,300	46,100	61,200
Semitropic Program	45,000	35,000	-	-
Arvin Edison Program	42,000	40,000	-	-
San Bernardino Valley MWD Program	54,000	70,000	57,000	80,000
Spot Market Transfers	**	**		
Subtotal of Current Programs	**986,100**	**650,300**	**1,723,900**	**1,882,200**
Programs Under Development				
Delta Improvements	200,000	200,000	200,000	200,000
Kern Delta WD Program	50,000	50,000	-	-
Additional Transfers/Storage • San Bernardino Valley MWD Conjunctive-use Program • Westside Valley Transfers • Eastside Valley Transfers	190,000	190,000	20,000	20,000
Subtotal of Proposed Programs	**440,000**	**440,000**	**220,000**	**220,000**
Maximum Supply Capability	**1,426,100**	**1,090,300**	**1,943,900**	**2,102,200**

* -- Represents expected supply capability for resource programs.
** -- Purchased on an as-needed basis.

California Aqueduct Deliveries

Program Capabilities*
Year 2020
(acre-feet per year)

Programs	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
Current Programs				
SWP Deliveries (Historical)	794,700	418,000	1,530,700	1,741,000
San Luis Reservoir Carryover	-	75,000	81,100	-
Advance Delivery with Coachella Valley WD and Desert WA	24,600	12,300	46,100	61,200
Semitropic Program	45,000	35,000	-	-
Arvin Edison Program	42,000	40,000	-	-
San Bernardino Valley MWD Program	54,000	70,000	57,000	80,000
Spot Market Transfers	**	**		
Subtotal of Current Programs	**960,300**	**650,300**	**1,714,900**	**1,882,200**
Programs Under Development				
Delta Improvements	200,000	200,000	200,000	200,000
Kern Delta WD Program	50,000	50,000	-	-
Additional Transfers/Storage • San Bernardino Valley MWD Conjunctive-use Program • Westside Valley Transfers • Eastside Valley Transfers	190,000	190,000	20,000	20,000
Subtotal of Proposed Programs	**440,000**	**440,000**	**220,000**	**220,000**
Maximum Supply Capability	**1,400,300**	**1,090,300**	**1,934,900**	**2,102,200**

* -- Represents expected supply capability for resource programs.
** -- Purchased on an as-needed basis.

CALIFORNIA AQUEDUCT DELIVERIES
STATE WATER PROJECT DELIVERIES

SOURCE OF SUPPLY

The State Water Project provides imported water to the Metropolitan service area and has historically provided from 25 to 50 percent of Metropolitan's supplies. In accordance with its contract with the Department of Water Resources (DWR), Metropolitan is entitled to 2,011,500 acre-feet per year from the State Water Project. Actual deliveries have never reached this amount and depend on availability of supplies as determined by DWR. Metropolitan pays both fixed costs of financing SWP facilities construction and variable costs of operations, maintenance, power and replacement costs for water delivered each year. SWP water is delivered to Metropolitan through the East Branch at Devils Canyon Power Plant afterbay, along the Santa Ana Valley Pipeline and at Lake Perris. Metropolitan takes delivery from the West Branch at Castaic Lake.

EXPECTED SUPPLY CAPABILITY

The Edmund G. Brown California Aqueduct is capable of transporting Metropolitan's full 2,011,500 acre-feet of SWP entitlement. The quantity of water available for export through the California Aqueduct, however, can vary significantly year to year. The amount of precipitation and runoff in the Sacramento and San Joaquin watersheds, system reservoir storage, regulatory requirements and contractor demands for SWP supplies impact the quantity of water available to Metropolitan.

Prior to the execution of the Bay-Delta Accord in 1995, significant uncertainties existed regarding how much of the water in the Sacramento San Joaquin Bay-Delta would be available for export and how much would be required to meet regulatory requirements for meeting water quality standards and sustaining endangered spices. The Bay-Delta Accord and the subsequent CALFED process removed significant uncertainties associated with regulatory requirement thus providing a base for the DWR and the SWP contractors to estimate available water supplies. As discussed in a subsequent section, actions being undertaken by the CALFED process and the Phase 8 water rights process should enhance the reliability of supplies in the future.

Utilizing the regulatory standards in the Bay-Delta Accord, and historic precipitation and runoff data and reservoir levels, DWR estimates the water supply available for export to Metropolitan and the SWP contractors. These estimated base supplies are shown on the table below.

RATIONALE FOR EXPECTED SUPPLY

Metropolitan and 28 other public entities have contracts with the State of California, for a State Water Project water supply. These contracts require the state through its DWR, utilize reasonable efforts to develop and maintain a SWP water supply. The state has made significant investment in infrastructure. It has constructed 28 dams and reservoirs, 26

CALIFORNIA AQUEDUCT DELIVERIES
DESERT WATER AGENCY/COACHELLA VALLEY WATER DISTRICT/METROPOLITAN WATER EXCHANGE PROGRAM

SOURCE OF SUPPLY

The Desert Water Agency (DWA) and Coachella Valley Water District (CVWD), both in Riverside County, have entitlements to State Water Project (SWP) water, but do not have any physical connections to the SWP facilities. Both Agencies are adjacent to the Colorado River Aqueduct. In order for DWA and CVWD to obtain water equal to their SWP entitlement allocations, Metropolitan has agreed to exchange an equal quantity of its Colorado River water for DWA and CVWD's SWP water. DWA has a SWP entitlement of 38,100 acre-feet per year and CVWD has a SWP entitlement of 23,100 acre-feet per year, for a total of 61,200 acre-feet per year.

EXPECTED SUPPLY CAPABILITY

Under the existing agreements, Metropolitan provides water from its Colorado River Aqueduct to DWA and CVWD in exchange for SWP entitlement supplies of those agencies. Metropolitan can deliver additional water to its DWA/CVWD service connections permitting these agencies to store water. When supplies are needed, Metropolitan can then receive its full Colorado River supply as well as the State Water Project entitlement allocation from the two agencies, while the two agencies can rely on the stored water for meeting their water supply needs. As of the end of September 2001, there was 238,795 acre-feet in the Advance Delivery account. The combined SWP entitlement of DWA and CVWD is 61,200 acre-feet. The water supply available to Metropolitan is presented below:

Estimated Water Supplies Available for Metropolitan's Use
Under the Desert Water Agency & Coachella Valley Water District
Water Exchange Program
(acre-feet per year)

Year	Multiple Dry-years (1990-1992)	Single Dry-year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	24,600	12,300	46,100	61,200
2010	24,600	12,300	46,100	61,200
2015	24,600	12,300	46,100	61,200
2020	24,600	12,300	46,100	61,200

* --Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

The DWR estimates the amount of supplies that are available each year. Metropolitan uses a forecasting method for SWP deliveries based on historical patterns of precipitation, runoff and actual deliveries of water.

Historical Record: The DWA and CVWD Exchange Program is currently in operation. The Advance Delivery Agreement has been in place since 1967 and modified in 1984.

Written Contracts or Other Proof:

- 1967 and 1983 Water Exchange Contract and Agreements. The DWA and CVWD Program is currently in operation. The DWA and CVWD water exchange contracts have been in place since 1967, amended in 1972 and were modified with execution of additional agreements in 1983.
- 1984 Advance Delivery Agreement. DWA, CVWD and Metropolitan executed an Advance Delivery Agreement. This Advance Delivery Agreement allows Metropolitan to supply DWA and CVWD with Colorado River water in advance of the time these agencies are entitled to receive water under the Exchange Agreement. In future years, Metropolitan can recover this water by reducing its deliveries under the exchange agreement.

Financing: The funds for deliveries under this Program are included in Metropolitan's O&M budget and Long-range Financial Plan.

Federal, State, and Local Permits for Construction: The DWR is responsible for acquiring, maintaining and complying with numerous Federal and State permits for operation of the SWP.

- July 26, 1983 CVWD Negative Declaration, Whitewater River Spreading Area expansion Phase 1.

- February 1983, DWA Final EIR for the proposed extension of time for utilizing Colorado River water to recharge the upper Coachella Valley groundwater basins to the year 2035, Volume I and II, April 1983 Volume III

CALIFORNIA AQUEDUCT DELIVERIES
SEMITROPIC WATER BANKING AND EXCHANGE PROGRAM

SOURCE OF SUPPLY

The agreement between Semitropic Water Storage District (Semitropic) and Metropolitan was implemented in February 1994. Semitropic obtains water from the SWP through its contracts with the Kern County Water Agency. SWP supplies irrigate an area of 161,200 acres within Semitropic's service area. When this surface water is not available, these growers withdraw water from the underlying aquifer. The contract between Semitropic and Metropolitan to allow Metropolitan to make use of 35% of the additional storage in Semitropic's groundwater basin. In years of plentiful supply, Metropolitan could deliver available SWP supplies to Semitropic through the California Aqueduct. During dry years, Metropolitan could withdraw this stored water. Four other banking partners participate in this Program and utilize the remaining 65% of the additional storage in Semitropic's groundwater basin.

EXPECTED SUPPLY CAPABILITY

The Semitropic-Metropolitan Program provides Metropolitan with the capacity to store up to 350,000 acre-feet of water under the current agreement. During dry years, Metropolitan can recover its stored water through a combination of direct pumping of the groundwater and the release of Semitropic's SWP entitlement. The return of water to Metropolitan ranges from 31,000 to 170,000 acre-feet per year depending on groundwater conditions and water supply hydrology and banking partners usage.

Estimated Water Supplies Available for Metropolitan's Use
Under the Semitropic Water Banking and Exchange Program
(acre-feet per year)

Year	Multiple Dry-years (1990-1992)	Single Dry-year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	45,000	35,000	-	-
2010	45,000	35,000	-	-
2015	45,000	35,000	-	-
2020	45,000	35,000	-	-

* --Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

Implementation Status: The Semitropic-Metropolitan Water Banking & Exchange Program has been operational since 1994 and with existing agreements will continue to operate over the term of 41 years (1994-2035). Metropolitan has about 360,700 acre-feet in its storage account and withdrew 31,500 acre-feet in 2001.

Written Contracts or Other Proof:

- 1992 Turn-in/out Construction, Operation and Maintenance Agreement. This Agreement was executed in 1992 by the Department of Water Resources and Semitropic to allow construction, operation and maintenance of the Semitropic California Aqueduct Turn in/out.
- 1993 Temporary Semitropic-Metropolitan Water Banking Agreement. This Agreement was executed in February 1993 by Semitropic and Metropolitan to allow the storage of available Metropolitan Supplies in advance of execution of the long-term agreement.
- 1994 Semitropic/Metropolitan Water Banking and Exchange Agreement. This Agreement was executed in December 1994 by Semitropic and Metropolitan to implement the program for a 41 year term (1994-2035).
- 1995 Point of Delivery Agreement. This agreement, with The Department of Water Resources, Kern County Water Agency and Metropolitan, allows Metropolitan to divert water from the California Aqueduct into Semitropic's service area.
- 1995 Introduction of Local water into the California Aqueduct. This agreement, with The Department of Water Resources, Kern County Water Agency and Semitropic, allows Metropolitan to receive water from the program into the California Aqueduct.

Financing: Metropolitan's payments for the Semitropic Program are included in the O&M budget and paid out of the Water Transfer Fund.

Federal, State and Local Permits for Construction:

- Final EIR. Semitropic acting as the Lead agency under CEQA and Metropolitan acting as a responsible agency jointly completed the Environmental Impact Report for the Program. The EIR was certified by Semitropic In July 1994 and adopted by Metropolitan in August 1994
- Regulatory Approvals. All regulatory approvals are in place and program is operational.

CALIFORNIA AQUEDUCT DELIVERIES
ARVIN-EDISON WATER MANAGEMENT PROGRAM

SOURCE OF SUPPLY

The Arvin-Edison Water Storage District (Arvin-Edison) manages the delivery of local groundwater and water imported into its service area from the Central Valley Project's (CVP) Millerton Reservoir via the Friant-Kern Canal. The surface water service area consists of 132,000 acres of predominantly agricultural land, and to a minor degree, municipal and industrial uses. It is situated in Kern County. Arvin-Edison operates its supplies conjunctively, storing water in the underlying aquifer when imported supplies are available and withdrawing that water when the availability of imported supplies are reduced. In 1997, Metropolitan entered into an agreement with the Arvin-Edison Water Storage District. The agreement allows Metropolitan to store available water in Arvin-Edison's groundwater basin, either through direct spreading operations, or through deliveries to growers in Arvin-Edison's service area. Similar to Arvin-Edison's own usage, this previously stored water could be withdrawn when the availability of imported supplies to Metropolitan is reduced.

EXPECTED SUPPLY CAPABILITY

The Arvin-Edison/Metropolitan Program provides Metropolitan with the capacity to store up to 250,000 acre-feet of water under the current agreement, and the option to increase the storage capacity to 350,000 acre-feet. During dry years, Metropolitan can recover its stored water either through direct pumping of the groundwater or through exchange. The return of water to Metropolitan ranges from 40,000 to 75,000 acre-feet per year depending on groundwater conditions and water supply hydrology.

Estimated Water Supplies Available for Metropolitan's Use
Under the Arvin-Edison Water Banking Program
(acre-feet per year)

Year	Multiple Dry-years (1990-1992)	Single Dry-year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	42,000	40,000	-	-
2010	42,000	40,000	-	-
2015	42,000	40,000	-	-
2020	42,000	40,000	-	-

* --Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

Implementation Status: The Arvin-Edison/Metropolitan Water Management Program has been operational since 1997 and by existing agreements will continue to operate over the term of 30 years (1997-2027) with a possible extension to 2035. Metropolitan has about 210,000 acre-feet in its storage account and withdrew 20,000 acre-feet in 2001.

Written Contracts or Other Proof:

- 1997 Arvin-Edison/Metropolitan Water Management Agreement. This Agreement was executed in December 1997 by Arvin-Edison and Metropolitan to implement the program for a 30 year term (1997-2027).
- 1998 Turn-in/out Construction and Maintenance Agreement. This Agreement was executed in 1998 by the Department of Water Resources, Kern County Water Agency, Arvin-Edison and Metropolitan to allow construction, operation and maintenance of the Arvin-Edison California Aqueduct Turn in/out.
- 1998-2002 Water Delivery and Return Agreements. These agreements, with the Department of Water Resources, Kern County Water Agency, Arvin-Edison and Metropolitan, allow Metropolitan to divert water from, and introduce water to, the California Aqueduct.

Financing: Metropolitan's payments for the Arvin-Edison Program are included in the O&M budget and paid out of the Water Transfer Fund.

Federal, State and Local Permits for Construction:

- Regulatory Approvals. All regulatory approvals are in place
- Environmental Status. The Negative Declaration was completed in 1996.

CALIFORNIA AQUEDUCT DELIVERIES
SAN BERNARDINO VALLEY MUNICIPAL WATER DISTRICT PROGRAM

SOURCE OF SUPPLY

The San Bernardino Valley Municipal Water District Program allows Metropolitan to purchase a dependable annual supply, as well as, an additional supply for dry year needs. Under this program, Metropolitan purchases water provided to San Bernardino Valley Municipal Water District (Valley District) from its annual State Water Project (SWP) water allocation. Valley District delivers the purchased supplies to Metropolitan's service area through the coordinated use of facilities and interconnections within the water conveyance system of the two districts.

The purchased SWP supply is provided to Metropolitan as direct deliveries of annual SWP water through the California Aqueduct to Metropolitan's service area and as deliveries of recaptured SWP water previously stored in the San Bernardino groundwater basin to Metropolitan's service area. Under this Program, Metropolitan purchases a minimum of 20,000 acre-feet per year of SWP allocation every year. In addition, Metropolitan has the option to purchase Valley District's additional SWP allocation, if available, and the first-right-of-refusal to purchase additional SWP supplies available beyond the minimum and option amounts. In the event that Metropolitan's operational needs do not require all, or a portion of the minimum purchased water, that unused amount may be carried forward up to a total of 50,000 acre-feet for later delivery. Finally, the program establishes a critical dry year supply account for Metropolitan, which could provide additional amounts of dry year supplies. During any year designated by DWR as a critically dry year, Valley District could deliver from this account up to 50,000 acre-feet of recaptured SWP water previously stored in the San Bernardino groundwater basin. In order to facilitate the transfer, the program also provides the coordinated use of existing facilities, including the Foothill Pipeline and Inland Feeder, to improve the conveyance capabilities of the delivery of SWP water to the service areas of both districts.

EXPECTED SUPPLY CAPABILITY

Based on contract provisions for the minimum, option, first-right-of-refusal, and critical dry year supply account purchases of available SWP water from Valley District, the water supply available to Metropolitan are as follows:

RATIONALE OF EXPECTED SUPPLY

Implementation Status: The San Bernardino Valley Municipal Water District Program began operations in 2001 and is expected to remain in effect on an evergreen term basis.

Historical Record: Metropolitan has purchased 20,000 acre-feet of water under this Program in July 2001 and is scheduled to purchase at least 20,000 acre-feet of water in 2002.

Estimated Water Supplies Available for Metropolitan's Use
Under the San Bernardino Valley Municipal Water District Program
(acre-feet per year)

Year	Multiple Dry-years (1990-1992)	Single Dry-year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	54,000	70,000	57,000	80,000
2010	54,000	70,000	57,000	80,000
2015	54,000	70,000	57,000	80,000
2020	54,000	70,000	57,000	80,000

* --Represents expected supply capability for the resource program.

Written Contracts or Other Proof: Metropolitan's dependable annual and dry-year supplies from the San Bernardino Valley Municipal Water District Program are based on Metropolitan Board actions and agreements.

- 2000 Board Approval of Coordinated Operating Agreement. In June 2000, Metropolitan's Board authorized entering into a Coordinated Operating Agreement between Metropolitan and Valley District to develop projects that could provide benefits to both districts through the coordinated use of facilities and SWP supplies.
- 2000 Coordinated Operating Agreement. The Coordinate Operating Agreement between Metropolitan and Valley District was executed in July 2000.
- 2001 Board Approval of the Coordinated Use Agreement. In April 2001, Metropolitan's Board authorized entering into the Coordinated Use Agreement for Conveyance Facilities and SWP Water Supplies between Metropolitan and Valley District for the purchase of dependable annual and dry year supplies by Metropolitan.
- 2001 Coordinated Use Agreement. The Coordinated Use Agreement for Conveyance Facilities and SWP Water Supplies between Metropolitan and Valley District for the purchase of dependable annual and dry year supplies by Metropolitan was executed May 2001. The Agreement is effective as of July 1, 2001 for an "evergreen" term (10-year term with automatic annual extensions unless otherwise notified).

Financing: The funds to purchase Program water are included in Metropolitan's Water Transfer Fund and O&M budget.

Federal, State, and Local Permits/Approvals: The Program is effective as of July 1, 2001. An environmental review process and regulatory approval supported implementation.

- Final EIR. Final Regional Water Facilities Master Plan Environmental Impact Report dated February 1, 2001 was certified by Valley District, as lead agency, and by Metropolitan, as responsible agency. Notices of determinations were filed by Valley District and Metropolitan on May 29, 2001 and April 18, 2001, respectively.

- State Water Contractors' Review. In May 2001 the State Water Contractors reviewed and issued a letter supporting the program.
- DWR Review. The California Department of Water Resources agreed to the program in December 2001.

CALIFORNIA AQUEDUCT DELIVERIES
BAY-DELTA IMPROVEMENTS

SOURCE OF SUPPLY

Improving the water supply reliability of the State Water Project (SWP) is a primary focus of Metropolitan's long-term planning efforts. Restoring and stabilizing the health of the Bay-Delta through the implementation of CALFED's Bay-Delta Program and the Sacramento Valley Water Management Agreement are important steps to accomplishing this objective. These improvements could provide the regulatory certainty needed to better manage Bay-Delta supplies for the benefit of all users. These improvements are necessary for Metropolitan to attain its goal of 618,000 acre-feet of supply yield from the Bay-Delta in dry years by 2020. This supply yield is 200,000 acre-feet over existing available supplies, as described in its July 1999 policy direction regarding the Bay-Delta and CALFED. This goal means that Metropolitan could plan to use only 32.5 percent of its total SWP contract amount of 2.0 million acre-feet per year in dry years. In addition, Metropolitan policy objectives for Bay-Delta improvements include an average of 1.5 million acre-feet of supply yield to Metropolitan over all year types. Metropolitan's strategy is to reduce its dependence on SWP supplies during dry years, when risks to the Bay-Delta ecosystem are greatest, and to maximize its deliveries of available SWP water during wetter years to store in surface reservoirs and groundwater basins for later use during droughts and emergencies.

The SWP conveys water from the western slope of the Sierra Nevada Mountains to water users both north and south of the Bay-Delta. Specifically, SWP is delivered to Metropolitan's service area through a system of reservoirs, the Bay-Delta, pumping plants and the California Aqueduct. Owned and operated by the California Department of Water Resources (DWR), the SWP provides municipal and agricultural water to 29 State Water Contractors. Annual deliveries for the total SWP average about 2.5 million acre-feet. Municipal uses account for about 60 percent of annual deliveries, with the remaining 40 percent going to agriculture.

CALFED Bay-Delta Program: CALFED is a process involving numerous stakeholders (federal and state representatives, water users, environmental entities, and other interests) to develop solutions for Bay-Delta problems. On August 28, 2000, CALFED's Bay-Delta Program was approved and laid out final implementation plans for the first phase – the first seven years – of what is conceived to be up to 30 years of improvements in the Bay–Delta. This Program would be implemented through 11 major elements.

- Storage. By pursuing more water storage capacity in both surface reservoirs and underground aquifers, the Program could help to meet the needs of California's growing population, and provide much-needed flexibility to improve water quality and restore ecosystems. This Storage Element provides for the development of up to 950,000 acre-feet of new surface storage capacity and up to 1 million acre-feet of new groundwater storage capacity in Stage 1 of CALFED.
- Conveyance. Moving water through the Bay-Delta as efficiently as possible could increase the water system's flexibility and boost ecosystem health, water quality and levee stability. The Conveyance Element commits to through-delta conveyance

improvements, such as channel enlargements, the possibility of a screened Sacramento River water diversion to the Central Delta, and South of Delta programs.

- Water Use Efficiency. The Program proposes significant investments in water-use efficiency to generate real water supply benefits in the short-term. The Water Use Efficiency Element establishes the following annual targets: urban conservation savings of 520,000 to 680,000 acre-feet; agricultural savings of 260,000 to 350,000 acre-feet; and savings from water recycling of 225,000 to 310,000 acre-feet.
- Water Transfers. Through development of an effective water transfer market, CALFED aims to stretch existing water supplies by promoting transfers from willing sellers to buyers while protecting other water users, local economies and the environment. The Water Transfer Element seeks to streamline the approval process of state and federal agencies for water transfers and to create an Internet-based Water Transfers Information Clearinghouse.
- Ecosystem Restoration. Improvements in ecosystem health could reduce the conflict between environmental water use and other beneficial uses, and could allow more flexibility in water management decisions. The Ecosystem Restoration Element could recover at-risk native species; rehabilitate natural processes related to hydrology, stream channels, sediment, floodplains, and ecosystem water quality; maintain and enhance populations of species critical to commercial fisheries; protect and restore functional habitats; reduce the negative impacts of invasive species; and improve and maintain water and sediment quality.
- Environmental Water Account. Under the Environmental Water Account, water is acquired, stored and allocated to better protect fish and habitats at critical times. Many water users, including Metropolitan have transferred water supplies to this account. In return for the environmental benefits of water under this account, there are regulatory assurances that the existing deliveries of SWP and Central Valley Project water would not be disrupted.
- Watersheds. By providing financial and technical assistance for local watershed projects, CALFED would support projects that reduce water quality problems, restore and protect habitats, and improve water supply reliability. The Watershed Element seeks to foster local leadership by encouraging landowners, community members, environmental organizations and local public agencies to come together on watershed projects.
- Drinking Water Quality. The Drinking Water Quality Element identifies four actions for implementation: implement programs to manage salt loadings in the San Joaquin Valley; implement source control programs to reduce contaminants from Delta and upstream sources; invest in water treatment technology demonstration projects for UV disinfection and desalination; and control runoff into the California Aqueduct with the construction of necessary physical improvements.
- Levee System Integrity. This Program element provides for the stabilization and improvement of Delta levees to protect in-Delta as well as export users. It seeks to improve levees to a higher standard for greater protection; improve emergency response capabilities; reduce conflicts between levee maintenance and habitat needs;

improve coordination permit processes; and develop adequate and reliable funding for levee maintenance.

- Science Methods. The Bay-Delta Program commits to a science program to guide adaptive management decisions. The program includes the appointment of an eminent lead scientist to be assisted by an Independent Science Board. The Board will issue annual reports regarding the status and effectiveness of program measures and will recommend adjustments.
- Program Tracking and Accountability. Performance measures are used to translate program goals and objectives into measurable benchmarks of program success. They present information on conditions, trends and their significance. The Program will develop a project tracking system; track each project's performance, cost and schedule; measure progress to assure balance across all elements of the Program; and provide monthly status information on each project.

Sacramento Valley Water Management Agreement: Along with other SWP contractors, Metropolitan is working to ensure that the burden of meeting flow requirements set out by the 1995 Water Quality Control Plan (WQCP) is fairly shared across all Bay-Delta water users in the Phase 8 SWRCB hearing process. This hearing process has been stayed in order to allow discussions on a settlement agreement between the parties. The settlement agreement requires the development of short-term and long-term work plans to develop and manage water resources to meet Sacramento Valley in-basin needs, environmental needs under the WQCP, and export supply needs for consumptive demands and water quality.

- Short-term Work Plan for Settlement Agreement. A short-term work plan detailing projects that could provide benefits by the 2002 and 2003 water years was developed in October 2001. This plan comprises 45 projects that have been submitted for evaluation by the Work Plan Development Team from 16 entities in the Sacramento Valley. These projects can be divided into four categories; (1) conjunctive use projects involving development of groundwater supplies to be used in conjunction with surface water to provide for additional in-basin and export needs, including the WQCP relief, (2) system improvement projects involving the lining of canals, diversion modifications and improvement in water measurement, (3) groundwater planning and monitoring projects intended to better characterize the resource and allow for expansion of conjunctive use and water transfer activities, and (4) resolution of certain regulatory or institutional issues which present impediments to resolution of in-basin needs or water transfers. About 185,000 acre-feet of water annually are expected to be produced by the conjunctive use projects in the Sacramento Valley and could be available for use under a settlement. Much of this water could produce new yield. As a result, Metropolitan could be allocated up to 45, 000 acre-feet per year.
- Long-term Work Plan for Settlement Agreement. A medium and long-term work plan is required by Aril 26, 2002, detailing projects that can be operational by December 31, 2005 and December 31, 2010, respectively. The work plans will incorporate a number of water management tools to produce multiple benefits including groundwater/surface water conjunctive use, basin-wide management, coordinated operation of storage facilities, and improved management of water diversion and

distribution facilities, transfers and exchanges, water conservation and new off-stream surface storage.

EXPECTED SUPPLY CAPABILITY

Based on the work plans for CALFED's Bay-Delta Program and the Phase 8 SWRCB Water Rights Proceedings, annual and dry-year supplies capabilities are projected as follows:

Estimated Water Supplies Available for Metropolitan's Use Under the Bay Delta Improvements
(acre-feet per year)

Year	Multiple Dry-years (1990-1992)	Single Dry-year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	-	-	-	-
2010*	45,000	45,000	45,000	45,000
2015**	200,000	200,000	200,000	200,000
2020**	200,000	200,000	200,000	200,000

* Based on the short-term work plan for the Sacramento Valley Water Management Agreement.
** Based on the medium and long-term work plans for the Sacramento Valley Water Management Agreement and approved implementation plan for CALFED's Bay-Delta Program.

RATIONALE FOR EXPECTED SUPPLY

Implementation Status: Expected supplies are projected in accordance with the approved implementation plan for CALFED's Bay-Delta Program and with the work plans for the Sacramento Valley Water Management Agreement.

Written Contracts or Other Proof: Metropolitan's projected dependable annual and dry-year supplies from planned Bay-Delta improvements are based on Metropolitan Board actions and agreements.

- CALFED's Bay-Delta Program.
  - Bay-Delta Accord approved in December 1994.
  - Proposition 204 Funds approved by voter in November 1996.
  - Metropolitan policy direction regarding CALFED's Bay-Delta Program adopted in July 1999. This policy direction established water supply goals.
  - Proposition 13 funds approved by voters in March 2000.
  - CALFED Framework announced in June 2000.
  - Final implementation plans for the first phase of CALFED's Bay-Delta Program approved in August 2000, in conjunction with the approval of the Program and conclusion of the environmental review process.
- Sacramento Valley Water Management Agreement.
  - Short-term work plan detailing projects that could provide benefits by the 2002 and 2003 water years was developed in October 2001.

- Statement of settlement policy principles recommended in December 2001 by negotiators for approval.
- Statement of settlement policy principles approved by Metropolitan's Board in January 2002.
- Medium and long-term work plans required by April 2002, detailing projects that can be operational by December 31, 2005 and December 31, 2010, respectively.

Financing: Financing for Bay-Delta improvements are as follows:

- CALFED's Bay-Delta Program. Overall cost-sharing plans assume an equal distribution of the program costs among state, federal, and user/local funds. Final cost-sharing arrangements will depend on the specific projects that are implemented, and they will vary year by year. Initial years could be heavily funded by federal and state dollars. This initial funding will not include the cost of constructing the major storage or conveyance elements. Final cost shares, including reimbursement of up-front funding, are intended to be based upon a "beneficiaries pay" principle.
  - Year 1 funding arrangements were established in July 2000.

State	$528.1 million
Federal	$ 78.0 million
Other	$221.0 million
Unmet	$ 77.7 million

  - Year 2 funding arrangements were initiated in July 2001.

State	$553.1 million
Federal and Unmet Needs	$370.0 million
Other	$ 33.5 million

Federal, State, and Local Permits/Approvals:

- CALFED's Bay-Delta Program.
  - Programmatic Environmental Document finalized in July 2000.
  - Record of Decision issued in August 2000 for the final Programmatic Environmental Document regarding the CALFED Bay-Delta Program.
- Sacramento Valley Water Management Agreement.
  - Environmental review will be conducted by the applicable lead agencies on the various work plan projects to comply with the California Environmental Quality Act, and as appropriate the National Environmental Policy Act.

CALIFORNIA AQUEDUCT DELIVERIES
KERN DELTA WATER MANAGEMENT PROGRAM

SOURCE OF SUPPLY

In December 1999 Metropolitan advertised a request for proposals for participation in "The California Aqueduct Dry-year Transfer Program." As a result of this request for proposals, four programs were selected for further consideration of which Kern Delta Water District (Kern Delta) was part. In 2001, Metropolitan entered into Principles of Agreement with Kern Delta for the development of a Dry-year supply program. Kern Delta serves 125,000 acres of actively farmed highly productive farmland located in the San Joaquin Valley portion of southern Kern County. Kern Delta has under contract 180,000 acre-feet per year of good quality highly reliable pre- 1914 Kern River water and 25,500 acre-feet per year of SWP entitlement (under contract with Kern County Water Agency).

The dry-year supply program between Kern Delta and Metropolitan involves the storage of water with Kern Delta. Basically, in years of plentiful supply the agreement allows Metropolitan to store water in Kern Delta's groundwater basin, either through direct spreading operations, or through deliveries to growers in Kern Delta's service area. Metropolitan has access to the capacity to store up to 250,000 acre-feet of water at any one time and 400,000 acre-feet of water over the term of the agreement. When needed, Metropolitan can recover its stored water either through direct pumping of the groundwater or exchange at a rate of 50,000 acre-feet per year. The duration of the program will be from 2002 to 2027 with provisions allowing the water to be withdrawn until 2033.

EXPECTED SUPPLY CAPABILITY

The Kern Delta/Metropolitan Program provides Metropolitan with the capacity to store up to 250,000 acre-feet of water at any one time, and the option to store 400,000 acre-feet of water over the term of the agreement. When needed, Metropolitan can recover its stored water either through direct pumping of the groundwater or exchange at a rate of 50,000 acre-feet per year.

Estimated Water Supplies Available for Metropolitan's Use
Under the Kern Delta Water Management Program
(acre-feet per year)

Year	Multiple Dry-years (1990-1992)	Single Dry-year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	30,000	30,000	-	-
2010	50,000	50,000	-	-
2015	50,000	50,000	-	-
2020	50,000	50,000	-	-

* --Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

Implementation Status: Expected supplies are projected in accordance with accepted detailed groundwater modeling that has been accomplished for the program. In addition, the Kern Delta/Metropolitan Water Management Program has could be operational (with Board approval) by June 2002 and excepting water for storage by Sept 2002.

Financing: Metropolitan's payments for the Kern Delta/Metropolitan Program are included in the O&M budget and paid out of the Water Transfer Fund.

Written Contracts or Other Proof:

- 2001 Kern Delta/Metropolitan Principles of Agreement. Principles of agreement were entered into between Kern delta and Metropolitan in June 2001, covering program costs, operational aspects and risks/responsibilities.

Federal, State and Local Permits for Construction: Kern Delta, acting as lead agency under CEQA has prepared a full Environmental Impact Report. As part of this EIR, Kern Delta published a Notice of Preparation, and held meetings with the general public, interested agencies and resource agencies. The Draft EIR is expected to be released in February 2002 for Public review and certified by Kern Delta by April.

CALIFORNIA AQUEDUCT DELIVERIES
SPOT MARKET WATER PURCHASES

SOURCE OF SUPPLY

Metropolitan has acquired dry-year supplies through spot market water transfers in the past 10 years. Spot market water transfers involve water that is purchased only during the time of need (usually a drought). Payment for these transfers occurs only when water is needed. It is expected that water could continue to be available for spot market water purchases in the future. Up to 27 million acre-feet of water (80 percent of California's developed water) is delivered for agricultural use every year. Over half of this water is in the Central Valley; and much of it is delivered by, or adjacent to, SWP and Central Valley Project (CVP) conveyance facilities. This allows for the voluntary transfer of water to many urban areas, including Metropolitan, via the California Aqueduct.

Recent events indicate that a portion of this water could be available through mutually beneficial transfer agreements:

- The Governor's Water Bank in 1991, 1992, 1994, and 2001 secured 140,000 acre-feet per year to 820,000 acre-feet per year of water supply. The California Department of Water Resources (DWR) establishes and administers the Bank for purchasing water from willing sellers and transferring the water to those with critical needs using the State Water Project (SWP) facilities. Sellers, such as farmers and water districts, made water available for the Bank by fallowing crops, releasing surplus reservoir storage, and by substituting groundwater for surface supplies.
- Under the Central Valley Improvement Act, passed by Congress in October 1992, water agencies, such as Metropolitan, may for the first time be able to acquire a portion of the Central Valley Project's 7.8 million acre-feet per year of supply.
- Many member of the agricultural community are actively promoting the economic benefits resulting from the voluntary transfer of some of their entitlement.

EXPECTED SUPPLY CAPABILITY

Metropolitan could purchase dry year supplies from the Governor's Water Bank on an "as-needed" basis. The Bank water provides a reserve supply that could be available to Metropolitan to mitigate for unforeseen uncertainties that may impact expected supply capabilities. Metropolitan has purchased water varying in amounts from 100 to 215,000 acre-feet in a given year.

RATIONALE FOR EXPECTED SUPPLY

Implementation Status: The availability of dry year supplies from the Governor's Drought Water Bank has been demonstrated. Metropolitan has purchased dry year supplies from the Governor's Drought Water Bank in 1991, 1992, 1994, and 2001.

Historical Record: The historical record for purchases from the Bank and the number of sellers and buyers participating in the Bank is a strong indicator that there are significant amounts of water that can be purchased through spot market water transfers during dry year. This historical record is summarized are as follows:

Historical Record
Spot Market Water Purchases

Program	Purchases from Bank (acre-feet per year)		Participants	
	Total	Metropolitan	Sellers	Buyers
1991 Drought Water Bank	820,000	215,000	351	13
1992 Drought Water Bank	193,246	10,000	18	16
1994 Drought Water Bank	220,000	100	6	15
2001 Dry-year Water Bank	138,000	80,000	9	8

Written Contracts or Other Proof:

- Executive Order. In response to the extended 1987-92 drought, Governor Wilson issued an executive order establishing a Drought Action Team. This team, made up of state and federal officials, developed an action plan to lessen the impacts of the continuing drought (State 1991). One of the proposed actions was the formation of an emergency water bank managed by DWR. The purpose of the bank would be to help California's urban, agricultural, and environmental interests meet their critical water supply needs.
- Agreements with Buyers. Preceding the implementation of the 1995 and 2001 Water Banks contracts between DWR and agencies interested in buying were executed. The essential terms and conditions for negotiating purchases, including maximum offering price, quantity of water needed, and the timing of delivery, were established in these contracts.
- Agreements with Sellers. Purchases of water for the water banks have been secured through written contracts signed by DWR and sellers.
- 1999 Board Directive. Metropolitan's Board has authorized the acquisition and call of spot market water transfers in accordance with the Water Surplus and Drought Management Plan (WSDM Plan) adopted in April 1999. The WSDM Plan is a comprehensive policy guideline for managing Metropolitan's water supply during periodic surplus and shortage conditions. During shortage conditions, the plan specifies the type, priority and timing of drought actions, including the purchase of transfers on the spot market, that could be taken in order to prevent or mitigate negative impacts on retail demands.

Financing: Funds for spot market water purchases are included in Metropolitan's s annual O&M budget. Spot market purchases are paid out of Metropolitan's Water Transfer Fund.

Federal, State, and Local Permits/Approvals:

- Environmental Impact Report for the Bank. In November 1993, DWR prepared and finalized a programmatic Environmental Impact Report for the operation of the drought water banks during future drought events.
- Programmatic EIR. DWR has initiated a programmatic EIR on a permanent Drought Water Bank.

In-Basin Storage Deliveries

In-Basin Storage Deliveries

Program Capabilities*
Year 2005

(acre-feet per year)

Programs	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
Current Programs				
Diamond Valley Lake	150,000	150,000	-	-
Flexible Storage in Castaic Lake and Lake Perris	70,000	70,000	-	-
Groundwater Conjunctive-use				
• Long-term Seasonal Storage	100,000	100,000	-	-
• North Las Posas Storage Program	16,700	50,000	-	-
Subtotal of Current Programs	**336,700**	**370,000**	-	-
Programs Under Development				
Groundwater Conjunctive-use Programs				
• 2006 Programs (Raymond and Proposition 13 Programs)	-	-	-	-
• Additional Programs	-	-	-	-
Subtotal of Proposed Programs	-	-	-	-
Maximum Supply Capability	**336,700**	**370,000**	-	-

* -- Represents expected supply capability for resource programs.

In-Basin Storage Deliveries

Program Capabilities*
Year 2010
(acre-feet per year)

Programs	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
Current Programs				
Diamond Valley Lake	150,000	150,000	-	-
Flexible Storage in Castaic Lake and Lake Perris	70,000	70,000	-	-
Groundwater Conjunctive-use				
• Long-term Seasonal Storage	100,000	100,000	-	-
• North Las Posas Storage Program	70,000	70,000	-	-
Subtotal of Current Programs	**390,000**	**390,000**	**-**	**-**
Programs Under Development				
Groundwater Conjunctive-use Programs				
• 2006 Programs (Raymond and Proposition 13 Programs)	99,100	99,100	-	-
• Additional Programs	-	-	-	-
Subtotal of Proposed Programs	**99,100**	**99,100**	**-**	**-**
Maximum Supply Capability	**489,100**	**489,100**	**-**	**-**

* -- Represents expected supply capability for resource programs.

In-Basin Storage Deliveries

Program Capabilities*
Year 2015
(acre-feet per year)

Programs	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
Current Programs				
Diamond Valley Lake	150,000	150,000	-	-
Flexible Storage in Castaic Lake and Lake Perris	70,000	70,000	-	-
Groundwater Conjunctive-use				
• Long-term Seasonal Storage	100,000	100,000	-	-
• North Las Posas Storage Program	70,000	70,000	-	-
Subtotal of Current Programs	**390,000**	**390,000**	-	-
Programs Under Development				
Groundwater Conjunctive-use Programs				
• 2006 Programs (Raymond and Proposition 13 Programs)	99,100	99,100	-	-
• Additional Programs	100,900	100,900	-	-
Subtotal of Proposed Programs	**200,000**	**200,000**	-	-
Maximum Supply Capability	**590,000**	**590,000**	-	-

* -- Represents expected supply capability for resource programs.

In-Basin Storage Deliveries

Program Capabilities*
Year 2020
(acre-feet per year)

Programs	Multiple Dry Years (1990-92)	Single Dry Year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
Current Programs				
Diamond Valley Lake	150,000	150,000	-	-
Flexible Storage in Castaic Lake and Lake Perris	70,000	70,000	-	-
Groundwater Conjunctive-use				
• Long-term Seasonal Storage	100,000	100,000	-	-
• North Las Posas Storage Program	70,000	70,000	-	-
Subtotal of Current Programs	**390,000**	**390,000**	-	-
Programs Under Development				
Groundwater Conjunctive-use Programs				
• 2006 Programs (Raymond and Proposition 13 Programs)	99,100	99,100	-	-
• Additional Programs	100,900	100,900	-	-
Subtotal of Proposed Programs	**200,000**	**200,000**	-	-
Maximum Supply Capability	**590,000**	**590,000**	-	-

* -- Represents expected supply capability for resource programs.

IN-BASIN STORAGE DELIVERIES
FLEXIBLE STORAGE USE OF CASTAIC LAKE AND LAKE PERRIS

SOURCE OF STORAGE

The flexible storage use of Castaic Lake and Lake Perris, SWP reservoirs, provides Metropolitan with dry-year supply. The State Water Project (SWP) contractors participating in repayment of the capital costs of Castaic Lake and Lake Perris have the contract right to withdraw SWP water from these reservoirs in addition to their allocated supply in any year on an as-needed basis. These contractors must replace the water that is withdrawn under this program within five years of the first withdrawal. This storage is referred to as "flexible storage". It is available in Castaic Lake to Metropolitan, Ventura County Flood Control and Water Conservation District, and Castaic Lake Water Agency and available in Lake Perris to Metropolitan.

EXPECTED SUPPLY CAPABILITY

The dry year supply available to Metropolitan from the flexible storage use of Castaic Lake and Lake Perris totals up to 218, 940 acre-feet. This total supply is comprised of 153,940 acre-feet in Castaic Lake and 65,000 acre-feet in Lake Perris. The use of this available supply is planned as follows:

Estimated Water Supplies Available for Metropolitan's Use
Under the Flexible Storage Use of Castaic Lake and Lake Perris
(acre-feet per year)

Year	Multiple Dry-years (1990-1992)	Single Dry-year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	70,000	70,000	-	-
2010	70,000	70,000	-	-
2015	70,000	70,000	-	-
2020	70,000	70,000	-	-

* --Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

Implementation Status: Express provisions have been incorporated in Metropolitan's SWP contract since 1995. It has been available for use since 1995 and will continue to be in effect indefinitely commensurate with the SWP contracts.

Historical Record: Metropolitan has exercised the flexible storage provision in 2000 and 2001.

Year	Castaic Lake		Lake Perris	
	Withdrawal (acre-feet)	Payback (acre-feet)	Withdrawal (acre-feet)	Payback (acre-feet)
2000	----	----	8,181	3,471
2001	64,300	21,971 *	10,692	5,581 *

* Metropolitan is planning to pay back additional amounts of water in 2002.

Written Contracts or Other Proof: Metropolitan's dry-year supply from flexible storage is based on existing contract provisions.

- DWR Bulletin 132-94. The use of Castaic Lake and Lake Perris is determined in accordance with the proportionate use factors from Bulletin 132-94, Table B, upon which capital cost repayment obligations are based. Based on its capital repayment obligations, Metropolitan's proportionate use of Castaic Lake is 96.2% and of Lake Perris is 100%. Per its SWP contract, Metropolitan has express rights to utilize certain portions of the SWP southern reservoirs to supply water in amounts in addition to approved SWP deliveries. Independently Metropolitan has the ability to utilize these reservoirs for such purposes.
- Metropolitan's SWP Contract. Metropolitan's SWP contract was amended in 1995 to include Article 54, "Usage of Lakes Castaic and Perris." This article provides flexible storage to contractors participating in repayment of the capital costs of Castaic Lake and Lake Perris. Each contractor shall be permitted to withdraw up to a Maximum Allocation from Castaic Lake and Lake Perris. These contractors may withdraw a collective Maximum Allocation up to 160,000 acre-feet in Castaic Lake and 65,000 acre-feet in Lake Perris, which shall be apportioned among them pursuant to the respective proportionate use factors, as follows:

Flexible Storage Allocations

Participating Contractor	Proportionate Use Factor	Maximum Flexible Storage Allocation (acre-feet)
Castaic Lake		
Metropolitan	0.96212388	153,940
Ventura County Flood Control and Water Conservation District	0.00860328	1,376
Castaic Lake Water Agency	0.02927284	4,684
Total Castaic Lake	**1.00000000**	**160,000**
Lake Perris		
Metropolitan	**1.00000000**	**65,000**

Financing: The cost associated with the withdrawal and replacement of water in the flexible storage is included in Metropolitan's annual payments under the State Water Contract.

Federal, State, and Local Permits/Approvals: The flexible storage provision became effective in 1995. This operational provision was approved by DWR and may agree to the flexible storage usage in 1995. DWR has the approval authority to affect changes in the operations and usage of existing SWP facilities, including Castaic Lake and Lake Perris.

IN-BASIN STORAGE DELIVERIES
DIAMOND VALLEY LAKE

SOURCE OF SUPPLY

To meet the region's need for additional emergency, carryover, and seasonal storage beyond the amount provided by additional Conjunctive-use, Metropolitan construction the Diamond Valley Lake. Diamond Valley Lake provides the ability to store water; delivered from the East Branch of the State Water Project and from the Colorado River Aqueduct. Currently, water is pumped through the Wadsworth Pumping Station into the lake. Once stored in Diamond Valley Lake, water can be delivered by gravity flow to the majority of Metropolitan's service area. Also the conveyance capacity into and out of the reservoir is of sufficient capacity to maximize the storage of water during periods of availability and release water to quickly to meet demands.

EXPECTED SUPPLY CAPABILITY

Diamond Valley Lake was constructed to provide emergency, regulatory and carryover storage for Metropolitan's service area, and has a total capacity of 800,000 acre-feet. An emergency storage pool of 350,000 acre-feet has been reserved in the reservoir to meet projected critical demands over the next 20 years. The remaining 450,000 acre-feet of storage has been set aside to help meet dry-year and assist Metropolitan to capture excess supply from the SWP that might otherwise be lost. The water supply available to Metropolitan is presented below:

Estimated Water Supplies Available for Metropolitan's Use
Under the Diamond Valley Lake Project
(acre-feet per year)

Year	Multiple Dry-years (1990-1992)	Single Dry-year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	150,000	150,000	-	-
2010	150,000	150,000	-	-
2015	150,000	150,000	-	-
2020	150,000	150,000	-	-

* --Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

Program Facilities

Major facilities at Diamond Valley Lake include three earth dams to impound water, an inlet/outlet tower, a secondary inlet from the Inland Feeder, a large pumping station to deliver water into the reservoir, and power generating facilities. Recreational facilities consisting of a marina, parks, swimming areas, golf course, hiking trails, equestrian trails and lodging are planned.

Historical Record: The Diamond Valley Lake is currently operational and is approximately 2/3rds full..

Written Contracts or Other Proof: The Metropolitan Board authorized construction of Diamond Valley Lake in 1987.

Financing: The capital cost of Diamond Valley Lake ($2 billion) was financed by a combination of revenue bonds and operating revenues. Annual operating costs, including maintenance and pumping, are included in Metropolitan's annual O&M budget.

Federal, State, and Local Permits/Approvals:. All necessary permits have been obtained. A permit to generate and sell power has been acquired from the Federal Energy Regulatory Commission. No further regulatory permits are required.

IN-BASIN STORAGE DELIVERIES
GROUNDWATER CONJUNCTIVE USE PROGRAMS

SOURCE OF SUPPLY

The Integrated Resources Plan (IRP) approved by the Metropolitan Board established Metropolitan's strategy to store imported water that is most available during wet years in surface reservoirs or groundwater aquifers for later use during droughts and emergencies. In this way, Metropolitan can reduce its reliance on direct deliveries from the State Water Project (SWP) and the Colorado River during dry years when competing demands by other users and risks to the watershed ecosystems are greatest. During the development of the IRP, the Association of Groundwater Agencies (AGWA), in cooperation with Metropolitan, undertook a study to examine the potential for groundwater storage. AGWA, which is comprised of representation for six major basins in Southern California, was created in order to work collectively on groundwater issues, including conjunctive use of imported water. The findings of the AGWA study indicated that up to 1.5 million acre-feet of total storage capacity could be dedicated to regional storage of imported supplies. Utilization of current facilities, along with some facilities improvements, could result in up to 350,000 acre-feet of additional groundwater production as a result of storing imported water over the next 20 to 30 years. Based on the AGWA study, the 1996 IRP set a resource objective to develop about 175,000 acre-feet per year of dry-year supply from in-basin groundwater storage by 2010 and 300,000 acre-feet per year by 2020. Groundwater conjunctive use capabilities are being developed in accordance with the IRP through the following programs.

Long-term Seasonal Storage Program. Metropolitan currently administers the Long-term Seasonal Storage Program to encourage the replenishment of available water in groundwater basins and local reservoirs. This program is a pricing program that makes system supplies, which are in excess of that amount needed to meet consumptive municipal and industrial demands, available to the member agencies at a discounted water rate. The replenished water must be held in storage for over one year so that it can be used subsequently during dry years.

It is estimated that an average of 100,000 acre-feet per year of groundwater supply is produced as a result of Metropolitan's existing discount pricing for winter season deliveries. In order to meet the 1996 IRP resource objective, contractual groundwater conjunctive use programs should be developed to provide 200,000 acre-feet per year of dry-year supply by 2020.

North Las Posas Groundwater Storage Program. Metropolitan's first contractual conjunctive use program was developed in the North Las Posas groundwater basin. The agreement between Metropolitan and Calleguas Municipal Water District was signed in 1995 and amended in 1998. The term of the agreement extends to 2035. About 12,000 acre-feet per year of withdrawal capacity is currently available, with additional program facilities under construction. By 2010, the North Las Posas Program will be completed and provide maximum storage capacity of 210,000 acre-feet per year and an ultimate dry-year

yield of 70,000 acre-feet per year. The construction and performance of this Program are phased.

- Annual Replenishment Capacity. The total replenishment or "put" capacity for the program will be up to 50,000 acre-feet per year. This replenishment capacity will be provided through the construction of 30 aquifer storage and recovery wells in three phases.
  - Phase 1: 8,000 acre-feet per year (on-line in 2001)
  - Phase 2: An additional 35,000 acre-feet per year (scheduled for 2005)
  - Phase 3: An additional 23,000 acre-feet per year (scheduled for 2010)
- Annual Withdrawal Capacity. The total withdrawal or "take" capacity for the program will be up to 70,000 acre-feet per year. This withdrawal capacity will be provided through the construction of 30 aquifer storage and recovery wells in three phases).
  - Phase 1: 12,000 acre-feet per year (on line in 2001)
  - Phase 2: An additional 35,000 acre-feet per year (scheduled for 2005)
  - Phase 3: An additional 23,000 acre-feet per year (scheduled for 2010)
- Maximum Storage Capacity. The maximum storage capacity is 210,000 acre-feet.

Based on the parameters and construction schedules for the program, the dry-year supply available from this program is as follows.

Estimated Water Supplies Available for Metropolitan's Use
Under the North Las Posas Program
(acre-feet per year)

Year	Multiple Dry-years (1990-1992)	Single Dry-year (1977 Hydrology)	Average Year	Wet Year (1985 Hydrology)
2005	16,700	50,000	-	-
2010	70,000	70,000	-	-
2015	70,000	70,000	-	-
2020	70,000	70,000	-	-

* --Represents expected supply capability for the resource program.

Groundwater Storage Programs Operational in 2006: Metropolitan is currently negotiating additional contractual conjunctive use agreement in Raymond Basin and several programs partially funded by Proposition 13. In January 2000, the Metropolitan Board authorized entering into agreements with the City of Pasadena and Foothill MWD to implement the groundwater storage program contingent upon satisfactory completion of all necessary environmental documentation. The Board also appropriated funds to conduct initial environmental, engineering, and planning studies. The Program is expected to yield 50,000 acre-feet in a dry year by 2005.

A total of $45 million in Proposition 13 local assistance grant funds have been allocated to Metropolitan by the California Department of Water Resources to help finance groundwater conjunctive use programs within Metropolitan's service area. Metropolitan

Contractual Groundwater Storage Programs Operational by 2006

Programs	Total Storage Capacity (acre-feet)	Dry-Year Yield (acre-feet per year)
Project Name: Raymond Basin Groundwater Storage Program Submitted by: City of Pasadena, Foothill MWD	75,000	25,000
Project Name: Phase 1: Long Beach Conjunctive Use Storage Project Submitted by: Central Basin MWD, West Basin MWD, Long Beach, Compton, Torrance	13,000	4,333
Project Name: Foothill Area Groundwater Storage Project Submitted by: Foothill Municipal Water District	9,000	3,000
Project Name: National City Aquifer Storage and Recovery Project Submitted by: Sweetwater Authority Sponsored by: San Diego County Water Authority	9,900	3,300
Project Name: Mission Basin Groundwater Storage and Recovery Submitted by: City of Oceanside Sponsored by: San Diego County Water Authority	5,700	1,900
Project Name: Orange County Groundwater Conjunctive Use Program Submitted by: Orange County Water District Sponsored by: Municipal Water District of Orange County	60,000	20,000
Project Name: Spadra Basin Injection/Extraction Submitted by: Three Valleys MWD	2,400	800
Project Name: San Dieguito Recharge and Extraction Project Submitted by: Olivenhain MWD Sponsored by: San Diego County Water Authority	2,250	750
Project Name: Live Oak Basin Conjunctive Use Project Submitted by: Three Valleys MWD	21,000	7,000
Project Name: Chino Basin Programs Submitted by: Chino Basin Watermaster Sponsored by: Inland Empire Utility Agency	100,000	33,000
Total	**298,250**	99,100

* --Represents expected supply capability for the resource program.

issued a Request-for-Proposal (RFP) to its member agencies in November 2000. In response to this RFP, 18 proposals were submitted by twelve member agencies. Nine of the proposals were shortlisted and an additional two were wait-listed. In April 2001, the Metropolitan Board of Directors authorized finalization of agreement terms with the member agencies submitting shortlisted proposals and required that implementation of the agreement include the initiation of construction by September 2003. The approved Proposition 13 Programs are expected to yield 74,000 acre-feet in a dry year starting in 2005-2006 and continue to be operational over the 25-year agreement term. The dry-year yield from these groundwater conjunctive use programs, which are expected to be operational by 2006, are as follows:

Additional Groundwater Conjunctive Use Programs: Beyond 2006, it is anticipated that additional dry-year supply would be developed through the implementation of the wait-listed proposals and the potential expansions of the 2006 programs. These potential programs are described as follows:

Additional Groundwater Conjunctive Use Programs

Programs	Total Storage Capacity (acre-feet)	Dry-Year Yield (acre-feet per year)
Project Name: Elsinore Valley Groundwater Storage Program Submitted by: Elsinore Valley MWD Sponsored by: Western MWD	66,000	22,000
Project Name: San Gabirel Basin Conjunctive Use Project Submitted by: Three Valleys MWD	15,000	5,000
Expansion of 2006 Programs	TBD	TBD
New Groundwater Storage Programs	TBD	TBD
Total **(Required Yield to Meet IRP Resource Objective in 2020)**	**302,700**	**100,900**

* --Represents expected supply capability for the resource program.

RATIONALE FOR EXPECTED SUPPLY

Implementation Status: The status of implementation for the groundwater conjunctive use programs has been described under the "Source of Supply".

Historical Record:

- Long-term Seasonal Storage Program. As a result of Metropolitan's Long-term Seasonal Storage Program, local agencies are currently storing available imported water in order to increase groundwater production during the summer season and dry years. Based on the historical record for replenishment deliveries, it is estimated that an average of 100,000 acre-feet per year of groundwater supply is produced as a result of Metropolitan's existing Long-term Seasonal Storage Program.

- North Las Posas Groundwater Storage Program. The first phase of the program's ASR wells has been constructed, providing approximately 8,000 acre-feet per year of replenishment capacity and 12,000 acre-feet per year of withdrawal capacity. Metropolitan currently has about 30,000 acre-feet in storage..

Written Contracts or Other Proof: Metropolitan's dry-year supply from the groundwater conjunctive use programs is based on Metropolitan's Board actions and agreements.

- Approval of Long-term Seasonal Storage Program. Beginning in fiscal year 1989-90, Metropolitan implemented the Long-term Seasonal Storage Program. The continuation of this program was reaffirmed as part of the new rate structure that was approved by Metropolitan's Board in October 2001.

- Agreements for North Las Posas Groundwater Storage Program.
  - An Agreement between Metropolitan and Calleguas Municipal Water District (Calleguas) was executed in June 1995. The term of the Agreement extends to 2035. In this Agreement, a groundwater conjunctive use program would be implemented in the North Las Posas Groundwater Basin. Calleguas would build and operate a total of 30 Aquifer Storage and Recovery (ASR) wells and appurtenant facilities. Metropolitan would reimburse Calleguas for the cost of construction in exchange for use of the storage and pumping capacities. Metropolitan would have the capability to store 100,000 acre-feet of imported water and withdraw from storage 70,000 acre-feet per year.
  - An amendment to the Agreement between Metropolitan and Calleguas was executed in May 1998. The amendment allows Metropolitan to increase its storage capability from 100,000 acre-feet to 210,000 acre-feet and Metropolitan and Calleguas to improve the operation plans and financing structure for the program.
- Groundwater Conjunctive Use Programs Operational by 2006.
  - AGWA study dated month 1994, identifying the potential storage capacity and return capabilities from groundwater conjunctive use programs.
  - Principles for groundwater storage adopted by the Metropolitan Board in January 2000.
  - Resolution for Proposition 13 Funds adopted by the Metropolitan Board in October 2000.
  - Request-for-Proposal for groundwater conjunctive use projects issued in November 2000.
  - Information Letter to Metropolitan Board regarding the selection of groundwater conjunctive use projects in April 2001.
  - Term sheet for groundwater storage program between Metropolitan and Municipal Water District of Orange County executed in August 2001.
  - Term sheet for groundwater storage program between Metropolitan and Inland Empire Utility Agency executed in August 2001.
  - Term sheet for groundwater storage program between Metropolitan and Three Valleys MWD executed by June 2002.

- Term sheet for groundwater storage program between Metropolitan and Central-West Basin, and the cities of Torrance, Compton, & Long Beach executed by June 2002.
- Term sheet for groundwater storage program between Metropolitan and Inland Three Valleys MWD executed by June 2002.
- Term sheets for San Diego groundwater storage programs to be executed by June 2002.
- Agreements to implement the 2006 groundwater storage programs to be executed by September 2002.

Financing: Financing has been supplied from multiple sources as discussed below:

- Financing for Long-term Seasonal Storage Program. No capital or O&M costs are associated with the implementation of the Long-term Season Storage Program. Rather Metropolitan provides a discounted water rate to encourage member agencies to take delivery of surplus water for storage purposes.
- Financing for North Las Posas Groundwater Storage Program.
  - Metropolitan's Board appropriated $6 million to construct wells and appurtenant facilities in Phase 1 of the program in June 1995.
  - Metropolitan's Board appropriated $25 million to construct wells and appurtenant facilities Phase 2 of the program in January 1998.
- Financing for 2006 and Additional Groundwater Storage Programs
  - Metropolitan's Board appropriated $210,000 to conduct initial environmental, engineering and planning studies for the Raymond Basin storage program in January 2000.
  - Proposition 13 funds ($45 million) were allocated to Metropolitan by the state in May 2000 for the development of local groundwater storage projects.
  - Metropolitan's long-term capital program includes $210 million to implement groundwater conjunctive use programs through 2020.

Federal, State, and Local Permits/Approvals:

- Final EIR for North Las Posas Groundwater Storage Program. Environmental Impact Report for the North Las Posas Groundwater Storage Program was certified by Calleguas Municipal Water District, lead agency, and by Metropolitan, responsible agency, in April 1995 and June 1995, respectively.
- Environmental Review for 2006 Programs. Environmental review of the 2006 Groundwater Conjunctive Use Programs will be initiated in 2002.

Disclosure Statement

REPORT ON METROPOLITAN'S WATER SUPPLIES DISCLOSURE STATEMENT

Recent legislation authored by Senator Sheila Kuehl (SB 221) and Senator Jim Costa (SB 610) requires water retailers to demonstrate whether their water supplies are sufficient for certain proposed subdivisions and large development projects subject to the California Environmental Quality Act (CEQA). Although Metropolitan and other water wholesalers do not have verification responsibilities under this legislation, information provided by Metropolitan may be useful to retailers in complying with these responsibilities.

This report identifies actual and projected demands for water from Metropolitan as well as the water supplies available to Metropolitan to meet those demands. The information used in developing demand projections in this report includes data provided by the Southern California Association of Governments (SCAG), the San Diego Association of Governments (SANDAG), Metropolitan's public member agencies and other sources. The information used in developing supply projections includes data provided by the California Department of Water Resources regarding State Water Project supplies, the United States Bureau of Reclamation regarding Colorado River supplies, and other sources. Other information regarding water demand and supply is available to readers in Metropolitan's Integrated Resource Plan (IRP) and Regional Urban Water Management Plan (RUWMP). While there is information in the report discussing dry year water availability and Metropolitan's Water Supply and Drought Management Plan (WSDM Plan), this report does not cover Metropolitan's policies regarding water shortage allocations. Metropolitan's policy for water shortage allocations is to provide deliveries consistent with California law and the WSDM Plan; more information on this issue is available elsewhere.

Although all information in this report is believed to be accurate as of the time of issuance, Metropolitan does not warrant as to the reliability of information contained in this report supplied by third parties. Readers should make their own judgements to the extent on which they rely on the information in this report. This report will be updated as new information and circumstances warrant.